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Educational News and Editorial Comment

ANNOUNCEMENT OF A NEW TYPE OF TEACHER-TRAINING INSTITUTION

Teachers College, Columbia University, has announced that it will open in September, 1932, a new and radically different type of institution for the training of young men and women who expect to become teachers in nursery, elementary, and secondary schools. According to the published announcement, the establishment of this new type of institution is motivated by the following considerations.

All sound educational reconstruction depends upon the development of a new race of teachers—teachers who, through their own creative efforts, are able to call forth in their students constructive creative leadership. The teachers' college of the future has for its chief problem the selection and development of a generation of teachers very different from the typical teacher of today. This imperative need of a new type of teacher calls for radical modification of our present institutions for the training of teachers.

The new institution will operate essentially as an undergraduate unit at the college level and will grant the Bachelor of Science and the Master's degrees after a period of study of from three to five

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years. It will serve the dual purpose of preparing young people for teaching positions and of affording a demonstration college for graduate students in Teachers College.

The curriculum of the new college will constitute its most radical departure from teacher-training institutions of the traditional type. Special emphasis will be placed on child nature and development and on studies and experiences designed to give the student an insight into the problems of contemporary social life. It is contemplated that students will spend one or two semesters in travel and study abroad. They will be required to engage for one or more semesters in actual work in some industry or business and to participate in some form of social work. Moreover, after the work in the college proper has been completed and before a degree will be granted, each student must spend a probationary period of one year as a regularly employed teacher in a co-operating private or public school under the supervision of the members of the staff of the college. The following statement taken from the announcement of the preliminary plan will give a more adequate conception of the curriculum.

> Work in the field of education will be the central core of all curricula, the entire course being professionally treated. The study of education is conceived to be more than a consideration of the devices and techniques of teaching, or even of educational theory. As a social study *education* includes a broad consideration of the principles and organization of educational endeavor and an intimate acquaintance with the fields of philosophy, psychology, sociology, and economics. It cross-sections indeed every important phase of human activity. From this point of view education is a composite science calling upon many other fields of knowledge for necessary materials.
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> Since the major professional problems of the future teacher have to do with the child, the central core of the curriculum will deal with child nature and development. The student will be thrown into intimate contact under guidance with children in the laboratory schools, and out of this long and varied experience and scientific research in the psychology and pedagogy of child life there will develop an understanding and appreciation of the problems concerned which will be the chief foundation of the teacher's professional endeavors.
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> Another most essential phase of the curriculum of the new College is the study of contemporary civilizations and culture. Introduced under the heading of "Nation Study" or "Study of Culture," the student will be brought directly and indirectly to an appreciation of the psychology and modes of thinking and of living of modern civilization which will enable him to act as an interpreter to the youth who will come to his classes.

Recognizing the importance of international problems, provision will be made for bringing students of the college in contact with foreign countries by means of travel and study, or by means of exchange of students between this and foreign countries. It is contemplated that during his period of preparation for teaching each student shall spend at least one or two semesters, abroad. The expense for such study will not exceed the expense for a similar period of study in New York. Even if it is not possible for every student to study abroad, those students who are able to avail themselves of this opportunity, will be granted this privilege. The chief objective of foreign study will be to acquaint the student intimately with the culture of the foreign people, so that in his teaching activity he will be able to interpret to American children the spirit of the people with whom he has lived.

Situated in the metropolitan area of New York, the new College will endeavor to utilize to the utmost a study of the community as an environmental or cultural center. An analysis of this area presents a tremendous range of opportunities for the stimulation and orientation of young students. The day is past in all schools when education takes place within four walls. The new schools of Europe, elementary and secondary, might be defined as extending as far as the children or young people can travel. Groups are constantly under way studying at first hand the rich environment, and carrying back to their laboratories the facts discovered and the impressions received for their consideration and discussion. So in the new College for teachers, the community in which the institution is located is much more important than are the buildings in which the class work is held.

In order to understand better modern life and conditions, each student will spend one or more semesters participating in some form of industry. This work will be under the guidance of the social-science division of the College and will supplement the field courses in social welfare, industry, commerce, and the like. This phase of study may represent a period of work in a factory or cotton mill, on a farm, in an office, in a department store, or in a building trade. Its purposes are to develop an effective and functional appreciation and understanding of the economic and social order as related to the problems of living and working together.

The teacher is in a very real sense a social worker. It seems necessary, therefore, that those intending to teach should come in close contact with the activities of society that have to do with the education of boys and girls outside of school, whether these activities be of corrective or preventive nature. The curricula of the College will provide not only courses in social economy, but will look forward to affording each student active preparation in some form of social work. This activity may take place either during the summer or during the regular academic year.

It will be recognized that many of the essential qualities of educational leadership are best developed quite apart from active class instruction, coming from many and varied contacts and experiences. The social life of the students

will accordingly be one of the most important factors in the training program and will be an integral part of the curriculum. Frequent social activities and directed trips of a cultural nature will be regular parts of the social life of the student.

Under the new plan, "in place of a quantitative requirement of hours there will be substituted a qualitative standard of attainment." Thus the period of study will vary with the ability of the individual student. The traditional point and credit system will be abolished, and graduation will be conditioned on the student's ability to pass comprehensive examinations of an academic and professional character. While the lecture system will not be abolished, the usual amount of time given to classroom lectures and discussions will be materially reduced. Students will be given ample opportunity to do independent work and to pursue intensive investigations of the problems of individual and social living. The plan contemplates that "the greatest emphasis will be laid upon group association and group living among the students and between faculty and students. These groups must of necessity be small in order to provide that form of educative living essential to true education."

Rigid methods of elimination will be employed in the selection of students for the new college. Such will be the case because it is felt that at present mediocrity is the curse of the teaching profession. One-half the students will be men because of the conviction that men should be encouraged to become teachers. The chief bases of selection will be "sound scholarship, promise of growth in the field of education, and desirable personal qualities." Entrance examinations, personal interviews, and s atements from former instructors will be employed in selecting students. For the first year the student body will be limited to two hundred, divided equally between the Freshmen and Junior classes. The student personnel is to be built up gradually, and it is not contemplated that the number of students will ever exceed five hundred.

The ultimate purpose of the new college, of course, is not merely to supply the country with a limited number of superior teachers. If the experiment is successful, it is hoped that its procedures will be adopted by other teacher-training institutions throughout the country. The experiment, therefore, will be watched with a great deal of interest.

Dr. Thomas Alexander, Teachers College, Columbia University, will be director of the new college. Persons desiring further information may write him at 525 West 120th Street, New York City.

PROFESSIONAL STATUS OF CONTRIBUTORS TO THE "ELEMENTARY SCHOOL JOURNAL"

In this issue of the *Elementary School Journal* appears an analysis by J. R. Shannon of the authorship of articles published in eight leading educational journals for the period 1926–30, inclusive. The writers of articles published in these journals were classified in five groups: college instructors or administrators, local administrators, classroom teachers, others, and those whose professional status could not be identified. The readers of the *Elementary School Journal* will be interested in a comparison of the professional status of its contributors with the professional status of the contributors of the other journals included in the study. College instructors or administrators were by far the most prolific group of writers. They contributed 43.8 per cent of all the articles published in the eight periodicals, the range being from 19.9 per cent in the *Journal of Education* to 85.8 per cent in *Teachers College Record*. This group contributed 46.1 per cent of the articles published in the *Elementary School Journal*, a percentage which happens to be the same for the *School Review*. Local school administrators contributed 16 per cent of all the articles, the range being from 2 per cent in the case of *Teachers College Record* to 29.5 per cent in the case of the *American School Board Journal*. They contributed 25.4 per cent of the articles in the *Elementary School Journal*. Classroom teachers contributed only 6.6 per cent of all the articles. The lowest percentage of articles contributed by this group to any journal was 1.1 per cent in the case of the *American School Board Journal*, and the highest percentage was 41.7 per cent in the case of the *School Review*. This group contributed 16.9 per cent of the articles published in the *Elementary School Journal*. It will be seen, therefore, that the writers of articles published in the *Elementary School Journal* are rather well distributed, in comparison with other journals, among the three main groups of contributors.

One fact calls for additional comment: only 6.6 per cent of the articles in all the journals were written by classroom teachers. The

School Review and the *Elementary School Journal* are the only two periodicals in which more than 10 per cent of the articles were contributed by this group of writers. Obviously, classroom teachers should be encouraged to write more than they do. As Mr. Shannon points out in his article, few persons have better opportunities to experiment in education than do classroom teachers. They are very near the heart of the educational problem. School administrators should encourage teachers to experiment and to write.

A NEW SERIES OF RESEARCH STUDIES IN EDUCATION

The Duke University Press has recently published the first number of the Duke University Research Studies in Education. The monograph was prepared by William A. Brownell with the assistance of Lorena B. Stretch, and it bears the title *The Effect of Unfamiliar Settings on Problem-solving.*

The investigation reported in the monograph was undertaken to discover "whether children's success in solving arithmetic problems is in any way conditioned by the familiarity or the lack of familiarity in the settings described in the problems." Four different problems were used as the basis of the test, each problem being presented with four degrees of familiarity of setting. Great care was taken to make sure that the problems were similar at other points than setting, for example, the numbers used, the operations required, and the number of words employed. The gross results for the four problems combined gave "some evidence that unfamiliarity of settings decreases the number of correct answers secured from problems and that it accomplishes this end rather by interfering with the choice of operations than by lowering the quality of computation." The authors, however, were not content with the results discovered by the gross data. A detailed analysis of the four problems separately led to the following conclusions.

The detailed analyses which have been made of the results obtained with the four different problems (1) yield inconsistent conclusions regarding the effect of unfamiliar settings on the choice of operations, for in two of the problems there appeared to be some effect and in the other two, no effect; (2) suggest therefore that unfamiliarity of setting is conditioned in its influence by some other factor or factors not yet known, and that if these factors can be found, they may serve to explain the conflicting conclusions reported in (1) above; and (3) confirm the

conclusion of the first section that unfamiliarity of setting does not materially lower the quality of arithmetical computation.

Having reached the foregoing conclusions, the authors undertook to discuss possible conditions which may influence the effect of the familiarity factor on problem-solving. The following paragraphs summarize these findings.

In this section the attempt has been made to discover any factors which may condition the influence of unfamiliar settings in problem-solving. Four have been considered. First, the difficulty of the problem itself, apart from the question of the degree of familiarity of the setting, appears to determine in large measure the amount of influence that will be exerted by the setting. If the problem is very easy or if it is very hard, children's processes in solving the problem seem to be little affected by the nature of the setting as to familiarity. Second, the number of times that children have dealt with a given set of number relationships operates to determine the effect of unfamiliar settings. If the unfamiliar setting appears in connection with an early experience with a given set of number relationships, then its influence on problem-solving seems to be greater than it will be after more experience with these number relationships. Third, there is a small amount of evidence that it takes children longer to solve problems which contain unfamiliar settings. If this is so, then the amount of time that is allotted for the solving of the problem will influence the effect of the unfamiliar setting, at least so far as number of correct answers is concerned. Fourth, oral presentations of problems do not seem to increase the familiarity of settings enough to affect in any appreciable degree children's procedures in solving the problems, provided that such oral presentations are confined merely to a discussion of the settings themselves.

The implication of the results secured in this section seems to be clear: it is impossible to give an absolute answer to the question regarding the influence of unfamiliar settings on problem-solving. Each specific instance of an unfamiliar situation must first be examined with reference to the presence or absence in the problem of certain other complicating factors, four of which have been mentioned in the preceding paragraph. Until the effect of these factors is known, it is hardly practicable to predict the effect of the unfamiliar setting.

Finally, an attempt was made to discover the effect of unfamiliar settings on individual children, and the following conclusions were drawn.

The main conclusions which may be drawn from the study of the data in this section are: first, that children's choices of operations vary considerably when they are dealing with the same set of number relationships, and even when there are no changes in the nature of the setting with regard to familiarity; second, that unfamiliarity of setting is a factor which is not general in its opera-

tion, for in problems like those used in this study as many as 65 per cent to 80 per cent (and probably more, if adequate methods of identification could be developed) of the children seem to be unaffected by changes in the familiarity of settings; third, that those children who are most affected by unfamiliar settings in their choice of operations and in their computation are the ones who regularly are the least skilled in both these phases of problem-solving.

The monograph is characterized throughout by an exhaustive analysis of data. The excellent quality of this initial number speaks well for the new series of studies.

NEW EVIDENCE AS TO THE EFFICIENCY OF THE ALL-YEAR SCHOOL

It is a fact, not commonly known perhaps, that the school year in most American cities was longer in 1840 than in 1930. In the earlier period cities rather generally conducted their schools for the larger portion of the year. According to the *Report of the Commissioner of Education for the Year 1891–92*, New York City in 1841 had a school year of 49 weeks; Chicago, 48 weeks; Brooklyn, Baltimore, and Cincinnati, 11 months; Buffalo, 12 months; Philadelphia, 251 days; Boston, 224 days; and Detroit, 259 days. The rules adopted by the Board of Education of Philadelphia in 1839 specified that vacations were to be as follows: "February 22; Good Friday and following Monday; July 4; from second Monday in July to second Monday in August; December 25 to January 2." The Brooklyn school report for 1853–54 reported school attendance as follows: number of pupils attending four months, 2,483; six to eight months, 1,986; eight to ten months, 1,873; ten to twelve months, 1,654; twelve months, with vacation, 3,511.

In the decades following 1840 the tendency in cities was to increase the length of the summer vacation. By 1890 social and economic conditions prevailing in most cities tended to direct attention of school officials to the desirability of conducting summer schools to meet the needs of certain children in the school population. By 1916 the summer school had come to be a rather well-established institution. In that year the United States Bureau of Education reported that 211 cities maintained summer elementary schools with terms ranging from four to twelve weeks.

The success of the summer schools led school officials in certain

cities to undertake the experiment of all-year schools. In 1904 Bluffton, Indiana, established an all-year school having four three-month terms. All-year schools were established in Newark, New Jersey, in 1912. More recently the following cities have established schools of this type: Albuquerque, New Mexico; Aliquippa, Pennsylvania; Amarillo, Texas; Ardmore, Oklahoma; Bayonne, New Jersey; Eveleth, Minnesota; Gary, Indiana; Minot, North Dakota; Nashville, Tennessee; Omaha, Nebraska; and Tulsa, Oklahoma.

There has been a great deal of disagreement among school people as to the effectiveness of the all-year type of school organization. Professor W. C. Reavis, in the June, 1931, issue of the *Review of Educational Research*, has summarized the literature on the subject. He points out that the factual data are "limited in scope and very meager in amount." He concludes, however, that the data appear to support the contentions of the advocates of the all-year school.

Since 1924, Nashville, Tennessee, has divided the school year into three-month terms and has maintained an extra summer term of twelve weeks, the summer term being regarded as an integral part of the school year. In a recent survey of the schools of Nashville made by the Division of Surveys and Field Studies of the George Peabody College for Teachers, the surveyors attempted to measure objectively the effectiveness of the summer quarter. The data contained in the survey are of special significance, not only because of their objective character, but because, next to Newark, New Jersey, Nashville has probably carried the experiment with all-year schools farther than any other city. The following statement summarizes the findings and contains the recommendations of the survey staff with respect to the summer quarter of the elementary schools.

1. Approximately 45 per cent as many pupils take advantage of summer-quarter opportunities as take advantage of the opportunities provided during the other quarters of the year.

2. Although the school authorities of Nashville hold that the summer quarter is an integral part of the school year, the curriculum during the summer quarter has been limited both as to the subjects offered and as to instruction time.

3. There is a marked tendency for the achievement of pupils in Grades IV A, V A, and VI A to vary inversely with the number of summer quarters attended. Also, the achievement of pupils in Grade IV A of equal intelligence,

equal age-of-entrance, and with an equal number of quarters of school attendance varies inversely with the number of summer quarters attended. It appears that three months of summer attendance results in from one and a half to two months achievement.

4. There is a tendency for a larger proportion of pupils who make slow progress and who make rapid progress to attend the summer quarter than of pupils who make normal progress.

5. The number of quarters of school attendance required to reach Grades IV A, V A, and VI A varies directly with the number of summer quarters attended. Also the number of quarters of school attendance required by pupils of equal intelligence and equal age-of-entrance to reach Grade IV A varies directly with the number of summer quarters attended. Three summer quarters attendance has resulted in slightly more than two quarters advancement in grade placement; two summer quarters attendance in slightly less than one and a half quarters advancement; and one summer quarter attendance in nine-tenths of a quarter advancement.

6. The per cent of failure during the summer quarter is only slightly higher than it is during other quarters, and hence the slow progress of summer-quarter students cannot be accounted for by excessive failure during the summer quarter.

7. Failure in the quarter immediately preceding the summer quarter is not an important influence on summer-quarter attendance.

8. Many children gain grade placement by summer-quarter attendance above the level warranted by their maturity only to have such advancement followed by failure.

The above findings provide the basis for the recommendation of the survey staff with the respect to the summer quarter. That 45 per cent as many pupils attend the summer quarter of the elementary school voluntarily as attend the other quarters under compulsory attendance evidences a real demand in Nashville for elementary-school opportunities during the summer. However, in the judgment of the survey staff, the educational program which has been offered during the summer quarter is not sound. The summer quarter should be continued, but its educational program should be thoroughly revised so as to provide educational opportunities which meet the needs of boys and girls at the time of attending the summer quarter. In other words, the purpose of the summer quarter of the elementary school should be to educate boys and girls rather than to push them through school. For most pupils such an educational program will not involve time allotments to arithmetic, spelling, and other formal school subjects in addition to the provision already made during the other quarters of the year. In all probability the time allotment to these subjects in Nashville is already above the optimum amount. Rather, such a program will involve a broadening of the school offering. Opportunities should be afforded children to develop special interests in music, art, literature, science, manual and industrial arts, physical activities, and other such fields. School libraries and reading rooms should be open throughout the day under competent direc-

tion in order to encourage children to extend their experiences and develop good reading habits through free reading. Playgrounds, swimming pools, and athletic fields should likewise be available, under competent direction, for the entire day. In addition, provision should be made for bright pupils to accelerate their progress and for failures to make up work in cases where this is desirable. However, as more adequate promotion policies are followed and better methods of teaching are utilized, the number of pupils of these types will decrease and more and more pupils will take the general type of program described above.

Under no circumstances should this recommendation be interpreted to mean that less planning, direction, and organization will be required to operate the summer quarter of the elementary school. A summer-quarter program of the kind recommended requires as careful organization and direction as does the present program.

With respect to the high school, the committee found that the summer enrolment was 45 per cent of that in the other quarters. In 1930 the percentage of withdrawals from the summer quarter was, however, greater than the percentage for the autumn quarter by 5.6 per cent. It was found, moreover, that less than one-half the pupils attending the summer quarter took full advantage of the opportunities afforded. For example, during the spring quarter in 1930, 88 per cent of the pupils in the Hume-Fogg High School carried the normal load of studies or more, whereas during the summer quarter of the same year only 47 per cent carried as much as a normal load. There was a marked tendency, too, for summer-school pupils to drop subjects for which they had enrolled, the percentage of pupils dropping subjects for the spring and summer quarters of 1930 being 8.9 and 16.9, respectively. However, the pupils who continued their summer studies completed the work undertaken in about the same proportion as pupils who continued during a regular quarter. Seemingly, high-school pupils have made extensive use of the summer quarter to undertake new and advanced work. For example, for the summer quarter in 1930, 69 per cent of all work was of this type. The survey staff recommended that the summer quarter be continued but that its purpose be materially modified.

All library, physical-education, and athletic facilities should be open to all high-school pupils under competent direction during the entire summer. The regular work of the summer high school should, however, be limited to those who desire to make up high-school work in which they have previously failed and to such pupils as, for adequate reasons, desire to shorten the period of high-school attendance.

The survey, it should be pointed out, made no attempt to measure the social results of the summer school nor its effects on the health or physical development of children.

THE ELEMENTARY-SCHOOL TEACHER IN THE STATE OF NEW YORK

The University of the State of New York has recently published a bulletin under the title *Study of the Elementary School Teacher in New York State*. As was to be expected, the elementary-school teacher is almost invariably a woman. Ninety-six per cent of these teachers are women, and the ratio of unmarried to married teachers is three to one. The size of the community does not materially affect the situation with respect to the percentage of men and women teachers, but unmarried women are found much more frequently in the cities. In the one-room rural schools only 55 per cent of the teachers are unmarried women, whereas 37 per cent are women who either are or have been married. In the cities married women constitute only 14 per cent of the total number of teachers.

The general training of elementary-school teachers as a class leaves much to be desired. Only 83 per cent of this group of teachers are high-school graduates, and not more than 51.9 per cent have graduated from normal school. In fact, only 55.4 per cent have ever attended normal school at all. Nearly 6 per cent have attended college, and 3.2 per cent are college graduates. The difference between the general training of teachers in urban and rural communities is striking. For example, 90.2 per cent of the teachers in the cities are high-school graduates as compared with 73.5 per cent in one-room rural schools. Similarly, 81.2 per cent of the teachers in cities have attended normal school, while less than 15 per cent of the teachers in one-room schools have had this training. In every test of general training applied, the rural teachers are markedly inferior.

Conditions with respect to professional training are not particularly different. The amount of professional training which elementary-school teachers have had in college is almost negligible. The percentage having normal-school training has already been pointed out. One of the striking facts in this connection is the percentage of teachers who have had no professional training in college, normal school, or training class. For the state as a whole, 13.6 per cent of

the teachers fall into this classification. Somewhat more than a fifth of the one-room rural teachers have had no professional training of the type indicated.

The Regents of the University of the State of New York have adopted a resolution, it should be pointed out, which provides that "after September 1, 1934, the requirements for the issuance of any form of provisional certificate valid in the elementary schools of the state shall include at least two years of approved training beyond high-school graduation."

The study reveals two things very clearly: (1) The elementary schools of New York State are still staffed by a large number of individuals whose general and professional training is entirely inadequate. (2) The difference in the educational opportunities afforded city children and children in one- and two-room rural schools is indefensible. Conditions in the state of New York are no doubt more or less typical of the country as a whole. They reveal something of the magnitude of the task this country faces in staffing its schools with adequately trained teachers.

CENSUS RETURNS ON SCHOOL ATTENDANCE

The Director of the United States Bureau of the Census has made public the data on school attendance for 1930. On the first of April of that year there were in the population of the United States, 38,387,032 persons from five to twenty years of age, of whom 26,849,639, or 69.9 per cent, were returned as having attended school at some time since September 1, 1929. The number of persons in this age group attending school in 1930 represents a gain of 5,475,663 over the number in the same age group attending school in 1920. The accompanying table gives comparative data on school attendance for 1920 and 1930.

As will be readily seen, the most significant fact revealed by the table is the marked increase of attendance at the upper age levels. In 1920, of the whole number of children sixteen and seventeen years of age, 42.9 per cent attended school, whereas in 1930, of the whole number of children of this age group, 57.3 per cent were in school attendance. Similarly, for the group eighteen to twenty years of age, the percentage attending school increased from 14.8 in 1920 to 21.4 in 1930. The fact that in 1930 the number of persons twenty-

one years of age and over attending school was 1,034,782 as compared with 344,789 for the same age group in 1920 reveals something of the extent of the adult-education movement. Quite obviously, the economic and social demands of our industrial society are in-

SCHOOL ATTENDANCE FOR THE POPULATION OF THE UNITED STATES FIVE YEARS OF AGE AND OVER, 1930 AND 1920

Age, Sex, and Census Year	Total Number	Attending School	
		Number	Per Cent
5 to 20 years:			
1930	38,387,032	26,849,639	69.9
1920	33,250,870	21,373,976	64.3
Male:			
1930	19,274,149	13,521,768	70.2
1920	16,639,600	10,663,547	64.1
Female:			
1930	19,112,883	13,327,871	69.7
1920	16,611,270	10,710,429	64.5
5 years:			
1930	2,505,250	500,734	20.0
1920	2,347,839	441,411	18.8
6 years:			
1930	2,515,285	1,667,486	66.3
1920	2,338,315	1,480,714	63.3
7 to 13 years:			
1930	17,209,566	16,398,400	95.3
1920	15,306,793	13,869,010	90.6
14 and 15 years:			
1930	4,678,084	4,156,378	88.8
1920	3,907,710	3,124,129	79.9
16 and 17 years:			
1930	4,663,137	2,669,857	57.3
1920	3,828,131	1,644,061	42.9
18 to 20 years:			
1930	6,815,710	1,456,784	21.4
1920	5,522,082	814,651	14.8
21 years and over:			
1930	.....	1,034,782	.....
1920	.....	344,789	.....

exorably requiring young people to extend the period of their education and are forcing back into schools adults whose education has proved inadequate. No doubt an analysis of child-labor statistics and of the educational requirements set up by employers would throw much light on the increase of school attendance.

The data included in the census returns reveal that school attendance in the rural areas is still materially less than in urban areas. In the case of the urban population from five to twenty years old the

percentage attending school in 1930 was 72.3; the rural-farm population, 66.4; and the rural-non-farm population, 69.3. Separate figures are not given for the various age groups between five and twenty, but no doubt the rural areas would show a much lower percentage of attendance in the upper age groups. As was to be expected, the urban population showed a much larger attendance of persons twenty-one years of age and over than did the rural population, the total numbers of each group being: urban, 738,193; rural-farm, 143,283; and rural-non-farm, 156,217.

The data revealed by the census reports are significant, but they lack a great deal of being an adequate measure of school attendance. They merely record whether a person attended school or college at any time between September 1, 1929, and April 1, 1930. They are, therefore, no index of extent or regularity of attendance and, of course, do not indicate the nature of the school attended.

MOTION PICTURES IN THE SCHOOLS

The Motion Picture Division of the Department of Commerce, under the direction of E. I. Way, has completed an extensive survey of the use of motion pictures in the schools. The survey is based on questionnaires returned by nearly 6,000 teachers in 517 representative public-school units. In the opinion of the teachers, motion pictures have a distinct educational value. Approximately 89 per cent of the teachers who returned questionnaires stated that motion pictures are "very helpful" or "helpful." The following statement giving additional information disclosed by the summary is quoted from the *United States Daily*, which published an oral statement made by Mr. Way.

> Other advantages cited to which favorable responses were given include a quickened originality and a larger participation in project-work and other self-activities; an increase in the quantity and an improvement in the quality of the material which they read; a marked improvement in range and accuracy of vocabulary; an ability to concentrate mental activities, to think more accurately, and to reason more soundly; a clearer appreciation of the richness, accuracy, and meaningfulness of personal experience; and a greater facility in correlating features of their lessons with community conditions.
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> Out of 44,186 showings covered by the survey, 73 per cent were reported to have been given in connection with curricular activities and 27 per cent with extra-curriculum activities. The subject in which films played the largest part was social science, 40 per cent of the showings having been in connection with

this field. The second most popular subject was natural science, represented by 26 per cent of the showings. The fact that 66 per cent of the showings were in these two fields reflects the greater abundance of motion-picture films that are available on these subjects.

Five other subject fields—physical education, manual and industrial arts, home economics, English, and commercial—represent about 25 per cent of the total. Other subjects have a negligible distribution.

About 33 per cent of the showings were given in connection with curricular work in the social sciences. Approximately 20 per cent of the curricular showings were in natural sciences. For extra-curriculum purposes films in the natural sciences showed the greatest popularity, with titles in the social sciences running a close second.

Of the total showings, 40.6 per cent were in elementary schools, 27.2 per cent in junior high schools, and 32.1 per cent in senior high schools. These figures may result from the fact that many communities do not have junior high schools.

The most popular film subjects in elementary and junior high schools were the social sciences, while in the senior high schools the natural sciences invoked the most interest. . . . .

A majority of the schools reporting the use of motion pictures for instructional purposes employed nine teachers or fewer, with an almost constant decrease in use as size of the school increased. Less than 9 per cent of the schools reported having film libraries or depositories, and less than 17 per cent contemplate the establishment of such a unit.

Fifty-seven, or 8.74 per cent, of the teachers report that they secure 100 per cent of the films they use from commercial agencies; 271, or 41.57 per cent, secure all their films from educational agencies. Sixty-six per cent secure more than half from educational agencies and 22 per cent more than half from commercial agencies. The other 12 per cent divide their rentals equally between the two agencies.

Films were booked 100 per cent for one day only by 51.45 per cent of the teachers reporting, 100 per cent for one week by 12.53 per cent of the teachers, and 100 per cent for one month by less than 1 per cent.

More than 65 per cent of the teachers report that more than 50 per cent of their films are booked for one day only; about 20 per cent said that more than 50 per cent are booked for a week; and only 2 per cent said that more than 50 per cent are rented for a month. Ninety per cent said that they do not book any films for a period of a month.

In a tabulation showing the number of subject films which were considered the most adaptable to school use and therefore the most satisfactory for teaching purposes, it was found that science, geography, commercial subjects, history, and health accounted for more than 80 per cent of the film titles reported. However, if the films are classified in groups which contribute to larger units of instruction, such as social science and commercial films, social science would account for more than 32 per cent and commercial subjects for more than 23 per cent.

CONTRIBUTORS TO EDUCATIONAL PERIODICALS

J. R. SHANNON
Indiana State Teachers College, Terre Haute, Indiana

It is probably safe to assert that the principal force for educational leadership in America is being exerted through the columns of the educational periodicals. It would be interesting, therefore, to know what classes of educational workers are contributing the material that constitutes the great force for educational leadership. It would be especially interesting to know the place occupied by classroom teachers in this leadership. An analysis of the more popular educational periodicals and a classification of the contributing writers would furnish a good measure of the relative potency of different professional groups in this aspect of educational leadership.

The writer used four published studies reporting the popularity of different educational periodicals to determine which periodicals to select for the purpose of making such an analysis: (1) a study entitled "What Professional Magazines Do Prospective Educators Read?" by Walter Crosby Eells,[1] which reports in order of frequency the magazines voluntarily read by 115 students in Stanford University; (2) an unsigned article entitled "Public Libraries and Educational Journals,"[2] which reports the judgments of 253 members of the National Society of College Teachers of Education as to the educational journals which should be found in a public library; (3) a study by James L. La Poe[3] indicating which educational journals are most frequently read and which are found most helpful by 381 principals of senior high schools representing all states; (4) a study

[1] Walter Crosby Eells, "What Professional Magazines Do Prospective Educators Read?" *School and Society*, XXIX (April 6, 1929), 446–48.

[2] "Public Libraries and Educational Journals," *School and Society*, VI (October 13, 1917), 433–34.

[3] James L. La Poe, "The Senior High-School Principals' Professional Magazines," *Educational Research Bulletin* (Ohio State University), VI (September 14, 1927), 259–61. Quoted in "The Relative Standing of the *School Review*," *School Review*, XXXVI (February, 1928), 86–89.

by E. Lowell Kelly and Frederick L. Whitney[1] which gives two lists of periodicals, one showing the journals read most frequently by 250 elementary-school principals and the other showing those read most frequently by 250 elementary-school teachers.

The periodicals ranking among the first ten in each of the five lists are shown in Table I. The five lists are indicated by the names of the professional groups responsible for them, and the periodicals found among the first ten of each list are indicated by crosses in the appropriate columns. Nine nationally circulated educational periodicals (*American School Board Journal*, *Education*, *Educational Review*, *Elementary School Journal*, *Journal of Education*, *Journal of the National Education Association*, *School Review*, *School and Society*, and *Teachers College Record*) and various state journals appear among the first ten in three or more of the five lists. These, then, should make a good group of journals to use in the classification of authors. However, one of the nine, *Educational Review*, is no longer extant, having been amalgamated with *School and Society*.

The writers of articles published in these periodicals were classified in six groups. The first group was composed of college instructors and administrative officers. Representatives of all schools above the secondary level, including independent junior colleges, were classified in this group. When the name of a college was given with the name of a writer but without a statement of the writer's connection with the college, it was assumed that the writer was a member of the faculty, and he was so classified. As a result of this procedure, some college students may have been classified as college instructors. The second of the six groups of writers was composed of high-school, college, and university students. When the analysis and classification were complete, however, it was found that the number in this group was too small to deserve separate consideration. Therefore, the few students found in this classification were thrown in with a larger group classified as "others." The third group was composed of administrative officers in city, town, and county

[1] E. Lowell Kelly and Frederick L. Whitney, "Educational Magazines Read by Five Hundred Elementary-School Principals and Classroom Teachers," *Elementary School Journal*, XXIX (November, 1928), 176–80.

school systems. Superintendents, assistant superintendents, business directors, principals, and supervisors were the types most often occurring that were classified in this group. Members of school boards and officers in municipal universities were not counted in this classification. Classroom teachers, including critic teachers,

TABLE I

EDUCATIONAL PERIODICALS RANKED AMONG FIRST TEN BY VARIOUS TYPES OF READERS IN EACH OF FOUR DIFFERENT STUDIES

Periodical	University Students	Professors	Secondary-School Principals	Elementary-School Principals	Elementary-School Teachers
American Educational Digest	×			×	
American School Board Journal	×	×	×		
Child Welfare					×
Education	×	×	×		
Educational Administration and Supervision		×	×		
Educational Review	×	×	×		
Elementary School Journal		×		×	×
Industrial-Arts Magazine*					×
Journal of Education	×	×	×	×	×
Journal of Educational Method†				×	×
Journal of Educational Psychology		×			
Journal of Educational Research			×	×	
Journal of the National Education Association	×			×	×
Normal Instructor and Primary Plans‡				×	×
Primary-Education–Popular Educator§				×	×
School Life	×				
School Review	×	×	×		
School and Society	×	×	×		
Sierra Educational News	×				
State journals			×	×	×
Teachers College Record		×	×	×	×

* The name of this periodical has been changed to *Industrial Arts and Vocational Education.*

† The name of this periodical has been changed to *Educational Method.*

‡ The name of this periodical has been changed to the *Instructor.*

§ The name of this periodical has been changed to *Grade Teacher.*

in elementary and secondary schools composed the fourth group. Teachers in junior colleges which are extensions of local public school systems were also classified in this group. When the name of an elementary school or of a high school was given with the name of a writer but without a statement of the writer's position in the school, it was assumed that the writer was a classroom teacher, and he was so classified. As a result, many school principals were doubt-

less classified as classroom teachers. Such erroneous classification of writers in the *School Review* is especially probable. The *Journal of the National Education Association*, more than other periodicals, is careful to state definitely the positions of its classroom-teacher contributors. A number of other persons, whose positions were stated but who did not belong in any of the groups already described, constituted the fifth group, which is called "others." Some of the occupational groups under this heading are: national, state, and local government officials; architects; physicians; members of the staff of the United States Office of Education; members of the staff of the National Education Association and of other national organizations; school-board members; and students. No indication was given concerning the positions of a large number of writers in most of the eight periodicals analyzed. These writers, therefore, were grouped under the heading "unidentified." This classification does not include writers of unsigned articles or writers of articles bearing only initials or such statements as "A correspondent" or "One who tried it." If, however, these signatures showed clearly that the writers were college instructors, school administrators, or classroom teachers, the writers were classified with their proper groups. Otherwise, unsigned articles were not counted in the analysis. A few writers whose positions were not stated happened to be known to the analyst; such writers were classified with the groups to which they belonged at the time they wrote. Some writers, probably retired, did not state their positions but instead gave positions formerly held by them. These persons were classified according to their former positions.

The articles included in the analysis were researches; statements of theory, history, or practice; discussions; reports; and special correspondence. Articles not included were editorials, book reviews, news items, poems, announcements, organization matters fostered by a periodical, obituaries, epigrams, and unsigned articles. In the case of joint authors each writer was counted according to his position, but in the case of a committee report the chairman only was counted. Writers of serial articles were counted once for each issue.

Each number of each of the eight educational periodicals for a period of five years beginning with January, 1926, and ending with December, 1930, was analyzed. The tabulations for each year were

kept separate in order that it might be determined whether any change had taken place in the proportion of articles written by different professional groups in any of the journals during the period of five years. When the analysis and classifications were complete, it was found that there was no definite tendency toward such a change

TABLE II

NUMBERS AND PERCENTAGES OF ARTICLES WRITTEN BY MEMBERS OF DIFFERENT PROFESSIONAL GROUPS APPEARING IN EIGHT EDUCATIONAL PERIODICALS DURING 1926–30, INCLUSIVE

PERIODICAL	COLLEGE INSTRUCTORS OR ADMINISTRATORS		LOCAL ADMINISTRATORS		CLASSROOM TEACHERS		OTHERS		UNIDENTIFIED		TOTAL	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Teachers College Record	295	85.8	7	2.0	15	4.4	21	6.1	6	1.7	344	100.0
School and Society	1,067	69.1	35	2.3	48	3.1	159	10.3	235	15.2	1,544	100.0
Education	195	52.4	32	8.6	37	9.9	17	4.6	91	24.5	372	100.0
Elementary School Journal	158	46.1	87	25.4	58	16.9	31	9.0	9	2.6	343	100.0
School Review	167	46.1	25	6.9	151	41.7	18	5.0	1	0.3	362	100.0
Journal of the National Education Association	111	26.4	75	17.9	25	6.0	108	25.7	101	24.0	420	100.0
American School Board Journal	274	25.5	317	29.5	12	1.1	163	15.2	307	28.6	1,073	99.9
Journal of Education	260	19.9	344	26.3	36	2.8	223	17.1	444	34.0	1,307	100.1
All periodicals	2,527	43.8	922	16.0	382	6.6	740	12.8	1,194	20.7	5,765	99.9

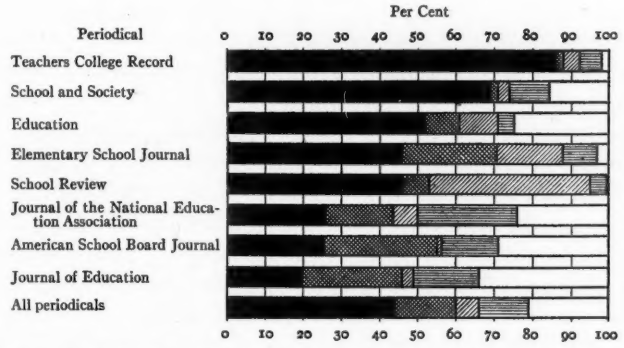
Per Cent
Periodical
0 10 20 30 40 50 60 70 80 90 100
Teachers College Record
School and Society
Education
Elementary School Journal
School Review
Journal of the National Education Association
American School Board Journal
Journal of Education
All periodicals
0 10 20 30 40 50 60 70 80 90 100

FIG. 1.—Percentages of articles in eight educational periodicals written by college instructors or administrators, local school administrators, classroom teachers, others, and unidentified writers (shown from left to right in the order named).

in any journal. Therefore, continued separation of the data into yearly groups became unnecessary.

Figures showing the results of the classification of writers in the eight educational periodicals for the period of five years are given in Table II. For each group in each journal are shown the number of articles and the percentage that such number is of the total. The situation shown by the percentages in Table II is graphically presented in Figure 1. It is apparent that in most of the eight periodicals, and in the total of the eight, college instructors and administrators are contributing more material than any other group of professional workers. Here, as in other aspects of educational leadership, classroom teachers—the most numerous of all educational workers—occupy a position of relative unimportance. As a group they are "hewers of wood and drawers of water unto all the congregation." However, it is comforting to know that all the journals analyzed persistently allow space for the productions of creative and progressive teachers, and it is probable that some journals feature the contributions of classroom teachers more than do the eight analyzed in this investigation. Certainly no educational periodical is prejudiced in favor of any particular group of educational workers; although a periodical may feature a particular aspect of education, it will gladly accept for publication the best manuscripts submitted, whether by professors, administrators, or teachers.

The prospect of having the report of an investigation published in a standard educational journal should be an incentive to study and experiment for any classroom teacher. Cassie R. Spencer has proposed that the supervisor encourage such activity on the part of a teacher by such a statement as the following: " 'Your progress in this situation will certainly put a professional feather in your cap. If the scores of these pupils show a noticeable improvement in the next test, I want you to write an account of your work for the June number of the state educational journal.' "[1] No one has a better opportunity to experiment in education than the classroom teacher for she is closest to the situation which is the center of all study in education—the classroom and the child.

[1] Cassie R. Spencer, "Supervision for Growth," *Journal of Rural Education*, I (January, 1922), 195.

FOR NON-READERS IN DISTRESS

NANCY NEWELL
Graduate Student, Harvard University

Reading disability is now recognized as a special problem in education. Wherever schools are not awake to the situation and are not doing remedial work, the child-guidance clinics are being besieged by mothers of non-readers in distress. Just what is a non-reader? Just how does a pupil become a non-reader? If a person of good intelligence cannot read normally, who is responsible and what can be done to help?

It may be helpful in clarifying the specific problem of non-readers to analyze briefly the process of reading from the psychological point of view. Reading is a stimulus-response reaction involving sensory efficiency, established associations, and appropriate response. Is it dependent on any one sensory element—auditory, visual, or kinaesthetic? The answer is "No," since the deaf learn to read visually, the blind learn to read through touch, and most persons disregard tactual and kinaesthetic features entirely and learn to read through a combination of visual and auditory stimuli. It is with this majority that teachers are normally concerned.

Reading, in simplest terms, is the association of a perceived symbol with a concept already existing in the mind. For instance, the word "corf" may be perceived, pronounced, spelled, and recognized when seen again, but it cannot be *read* until the concept of the thing which it represents is associated in the mind with either the visual or auditory stimulus. As a symbol, the word "corf" is entirely arbitrary; it has no logical relation to the thing for which it stands either in appearance or in sound. The associated meaning must be affixed by a purely mechanical bond, for which there is neither rhyme nor reason. Highly developed reading ability is an intellectual phenomenon, consisting in myriads of associations responding so fast to stimuli that the reader is conscious only of ideas

and not of the intricate process that is functioning automatically. Why have the non-readers failed to make the necessary associative bonds? Where has the stimulus-response mechanism broken down?

At the sensory end vision and hearing must be examined. If the child does not see the symbol correctly or does not always see it the same way, he will have difficulty. In Selzer's study[1] of the optical characteristics of a group of non-readers and a group of unselected pupils, it was found that the one significant difference between the groups was in muscular imbalance, or failure of co-ordination of the eye muscles. When this condition is present, the eyes do not stay in focus but shift involuntarily. Confusion of visual images results. Handicaps of vision may be of great importance in preventing the establishment of clear associations and proper techniques in the practice of reading. Since a background of spoken vocabulary is needed for reading, auditory factors are important. Distinct hearing of correct speech is necessary for adequate correspondence of auditory and visual associations.

The other end of the stimulus-response mechanism is less available for examination and has been the object of much speculation. Theories have been advanced of congenital word-blindness and embryological blight which are based on the idea of localized functions of the brain, but these have been abandoned for a more dynamic conception.

Dearborn, at the Psycho-educational Clinic of the Graduate School of Education, Harvard University, has conducted a study of the causes of reading disability over a long period of years. He has called attention to the apparent functional difficulty of non-readers which manifests itself in reversals of whole words and in confusion in the ordering of vowel and consonant sounds within words. This difficulty he has found to be significantly associated with tendencies to left-handedness, left-eyedness, and mirror-writing. In explanation of these phenomena he has suggested the theory of lateral cerebral dominance, which proposes that one cerebral hemisphere normally takes precedence over the other in initiating motor impulses and causes the preferential use of the left or right side where

[1] Charles A. Selzer, "A Study of Lateral Dominance and Visual Fusion." Unpublished Doctor's thesis, Graduate School of Education, Harvard University, 1929.

structure is paired.[1] He attributes reversals to the tendency of left-dominant individuals to follow the lines of reading from right to left in the sinistral direction rather than from left to right in the dextral direction—the generally accepted course of reading and writing.

Samuel Orton[2] proposed that antitropic memory images in the right and left cerebral hemispheres are the cause of reversals. Both Dearborn and Orton consider that unestablished, or alternating, dominance causes more confusion than definitely established dominance, either right or left, and Dearborn's observations indicate that there is more difficulty when handedness and eyedness are opposite than when they occur on the same side. Fred W. Smedley found a small, positive correlation between intelligence and unidextrality, that is, definite right- or left-handedness.[3]

Whatever may be the cause of the reading disability, there is a practical problem for the remedial teacher which resolves itself into the psychological problem of learning.

Not all left-dominant persons have difficulty with reading; some are very efficient readers. Not all persons of mixed handedness and eyedness have difficulty, as is, of course, recognized by the investigators cited. Therefore, the sinistral tendency does not of itself condemn any pupil to reading disability. For practical purposes, then,

[1] *a*) Walter F. Dearborn, "Special Disability in Learning To Read," *Eleventh Conference on Educational Measurements*, pp. 131–41. Bulletin of the School of Education, Indiana University, Vol. I, No. 3. Bloomington, Indiana: School of Education, Indiana University, 1925.

b) Elizabeth E. Lord, Leonard Carmichael, and Walter F. Dearborn, *Special Disabilities in Learning To Read and Write.* Harvard Monographs in Education, Whole No. 6. Cambridge, Massachusetts: Graduate School of Education, Harvard University, 1925.

c) Walter F. Dearborn, "The Nature of Special Abilities and Disabilities," *School and Society*, XXXI (May 10, 1930), 632–36.

d) Walter F. Dearborn, "Teaching Reading to Non-Readers," *Elementary School Journal*, XXX (December, 1929), 266–69.

[2] In Foreword to Marion Monroe, *Methods for Diagnosis and Treatment of Cases of Reading Disability*, pp. 335–39. Genetic Psychology Monographs, Vol. IV, Nos. 4 and 5. Worcester, Massachusetts: Clark University, 1928.

[3] Fred W. Smedley, "Report of the Department of Child Study and Pedagogic Investigation," *Forty-sixth Annual Report of the Board of Education for the Year Ending June 30, 1900*, pp. 47–116. Chicago: Board of Education, 1901.

the problem can be reduced to the simple terms of faulty learning, initiated perhaps by a sinistral tendency and confirmed into a habit before it was detected and corrected.

William H. Burton,[1] in his excellent discussion of learning, quotes Morrison's distinction between skills and techniques. Skills are variables and can be improved by practice, whereas techniques are adaptations which either are or are not accomplished. Adaptations once made are permanent, but skills may fade out from disuse.

In the process of learning to read, the synchronizing of visual and phonetic sequence from left to right is the fundamental adaptation that must be acquired. Once this sequence has been apprehended as a technique, skill may be improved by practice, but, if the pupil has failed to grasp the essential principle, remedial work must first be directed toward the technique. Failure to make this initial adaptation is aggravated by modern methods of teaching reading. As has been suggested by the findings of both Dearborn and Orton, it appears that we are raising a large crop of non-readers since the shift of emphasis to visual recognition of words as wholes. The old phonetic method has been abandoned, and rightly, because it focuses on details and induces "laryngeal verbalizations," which slow up the process of reading. In order that the pupil may acquire speed in reading, quick, visual recognition of words is practiced. When new words are approached, visual analysis for familiar elements is encouraged rather than phonetic analysis.

The majority of pupils adjust easily to this method and secure an understanding of the phonetic sequence incidentally. Thus, when phonetic drill is introduced later as a supplementary means of analysis and attack, it fits in nicely with an unconsciously acquired skill in integrating visual and phonetic sequence from left to right. A few pupils fail to absorb this principle and seem to have adopted the habit of reading words visually from right to left. Some even try to begin reading from the right of the page, but this tendency is quickly observed and corrected by the teacher. In the case of words the habit of reversal is not equally evident, and pupils continue their attempts to establish visual, auditory, and conceptual asso-

[1] William H. Burton, *The Nature and Direction of Learning*, pp. 24–43. New York: D. Appleton & Co., 1929.

ciations without understanding that there is any correspondence in the sequence of sounds and letters. Of course, if a pupil visualizes words from right to left, there is no phonetic sequence in this direction to help in recognition and pronunciation. The teacher gets an inkling of what he is doing when he reads "on" for "no," "was" for "saw," "you" for "boy," "good" for "dog," "girl" for "pig," "then" for "with," etc. Apparently, he begins at the wrong end of the word and guesses on the basis of two or more common letters. Extreme consequences of the failure to understand that letters and sounds coincide are illustrated by pupils who read "wolf" for "fox," "snow" for "rain," "goose" for "duck." This difficulty is something more than the ordinary error of confusing similar words; it indicates a complete failure to identify the sight and sound of the word. A child who read "wolf" for "fox" had associated with the printed symbol "fox" a wild, dog-like animal which he knew by the spoken name of "wolf." He had no association of the spoken name "fox" with the printed word but had come to associate the sound "wolf" with the printed symbol "fox" because both were associated with the concept of the animal.

The problem for the remedial teacher is to overcome these errors and to establish the fundamental adaptation of progression from left to right. It is first and foremost desirable to enlist the co-operation of the child. If he can understand the technical aspect of his difficulty, the battle is half won. Donald announced one day, "I can spell a word." He wrote "gge." Receiving no applause, he reconsidered his word and then wrote "egg." A discussion of this incident so helped him that he ceased to read and write in reverse.

Constant vigilance is necessary on the part of the teacher, for these non-reading children try to compensate for their deficiencies by memorizing whole pages, thus concealing their real inability to read. Kenneth, for instance, stumbled through three fables with much assistance. In order to test his comprehension, the remedial teacher at the end of each story asked him to tell what he had read. He repeated the fable verbatim. Had he been asked to re-read the stories, his success might have been attributed to effective tutoring. Thus, it is evident that drill on familiar material is of little use to the bright child with a reading disability. He simply learns to recite

the contents of the page, and he receives no real practice in reading. Much rearrangement of familiar words gives better results.

In the treatment of reading disability three typical difficulties must be dealt with. The first is emotional and is concerned with attitudes; the second is mechanical and has to do with possible physical handicaps; the third is technical and deals with adaptation and skill.

In every situation where remedial work is necessary, there is an emotional tension. The mysterious failure to learn to read on the part of an apparently intelligent child causes anxiety and misunderstanding. The parents can account for the difficulty only on the basis of obstinacy or mental defect, and they resort to reproaches, nagging, and even punishment. The child becomes bewildered and resentful and is antagonistic toward all attempts to help him. The teacher who has thirty or forty other pupils can only put him in her slowest group. If she does not understand his difficulty, she cannot help him. The unhappy plight of the frustrated non-reader sometimes contributes to undesirable forms of behavior as a means of obtaining the prominence which he cannot gain by acceptable means. Alden, for example, was in a foster home, without love, without toys, and he was failing in school. He had begun to play truant, to set fires, and to break windows of automobiles. Since he has been placed in a new home and has been given remedial instruction, he has become the star reader of his class, is addicted to reading at home, and is industrious, proud, and happy.

The first task of the remedial teacher is to release the tension by explaining the situation and by establishing an attitude of confidence and sympathetic interest. When he sees the relief of parents and the transformation of a depressed child into an eager and happy pupil, the teacher realizes the suffering that has been involved. Teachers are usually quick to appreciate the professional problem and are ready to co-operate with the remedial worker. They assume a new attitude of interest in the pupil, which restores him to his natural place in his class and gives him courage and confidence to attack his work. Sometimes the non-reader has formed such a distaste for reading that it is necessary to begin on work other than reading, such as pictures, games, or drawings, baiting the child with

praise toward letters and words. When the fear of failure and disapproval is removed and interest is aroused, the remedial teacher usually finds that the child has absorbed more than was supposed.

The mechanical aspect of remedial treatment has been briefly indicated in the discussion of stimulus and response. It need only be said that a competent oculist should be consulted with special reference to the problem of muscular imbalance. (Oculists frequently object to prescribing lenses for the correction of small degrees of muscular imbalance, preferring to allow the muscles to strengthen by use. However, if the pupil's educational progress is being seriously delayed, a compromise may be made by the provision of glasses for school hours only.) An aurist should be consulted if there is any reason to suspect defective hearing.

The third problem of remedial work is technical and involves motivation, explanation, and training up to the point of normal efficiency. In this phase there is special danger of overemphasis on the mechanics of reading. If this danger is not avoided, the pupil learns to pronounce glibly but remembers nothing of what he has read. He is blamed for lack of comprehension or memory, but the real difficulty lies in distraction of attention in the effort to render a creditable oral performance. The habit carries over into silent reading. In order that attention may be centered on meaning instead of mechanics, it is helpful to use typed material containing some absurd word which the pupil is challenged to detect. An example of such material read: "Admiral Byrd was always in touch with his family when he was in camp on the ice fields near the South Pole. He sent his wife a message by post card every day." Detecting such errors becomes a game, both amusing and instructive, and stimulates the alertness of the reader. A similar device is a picture accompanied by typed directions which suggest additions or corrections to be made by the pupil. The pictures may be cut from magazines, and the directions may be as frivolous or as educative as the teacher desires. The following statement accompanied one such picture: "This man is grinding the rough edges of an iron casting. Show by an arrow which way the grinding wheel is turning. Draw an arrow to every device that protects him from harm, and label each with its name."

An example of a victim of overemphasis on mechanics is Barbara, who has been tutored strenuously in reading. While able to perform astonishing feats of pronunciation, she cannot remember anything she has read. As she has some gift for drawing, she has become interested in illustrating the stories she reads, adding titles and explanations. She has to secure the ideas from the text in order to make the pictures. The illustrations are quick, crude sketches, but her natural feeling for balance and rhythm produces pleasing pictures, which can be sincerely praised. At first, questions on her reading were furnished, but she did not like those. Now she prepares questions for her instructor to answer on something she herself selects to read aloud. In order to frame hard questions, she ferrets out details and enjoys the lesson because the instructor fails often enough to need watching. The problem here is emotional, conditioned by failures. Her abilities must be used to develop her ideas and release her inhibitions.

Certain intrinsic interests may be cultivated to attract children to reading. The habit of turning to books for pleasure in leisure time can be fostered by teachers and parents through reading aloud simple stories such as the children can later read to themselves or to interested audiences of adults. If their elders enjoy reading and turn to it with avidity, the children will aspire to join the literary fraternity and will adopt the same attitude. If, however, parents consistently prefer motion pictures and bridge, their preference is clearly evident to children in spite of all preachments to the contrary, and the children naturally seek what enthralls the real interests of grown-ups. To arouse an insatiable curiosity in children's minds regarding the world about them and to direct it toward reading as a source of information are main objectives in the teaching of reading. These may be approached by discussions, at home and at school, of problems upon which books will shed light. Usable information will assume practical value.

Various mechanical devices which the writer has found helpful in diagnosing and correcting undesirable reading habits are described here as suggestions for further development.

The tendency of non-readers to read backward may be detected by flashing a card bearing a word written in reverse, as "yod."

Some children read it instantly. Some can read print in a mirror. One boy became so interested in these experiments that he read a page upside down very efficiently. These tests, instead of confusing the children as might be expected, seem to help them to understand their difficulties.

Those persons who are interested in the relation of left-handedness to reading disability will find food for thought in the results of a very simple device. Give the pupil a lump of modeling clay and ask him to make a mouse with a long tail and, when he has done this, to make feet and ears. Watch how the child uses his hands, and see which hand he uses for the more difficult work. The task represents an untrained activity in which no one has dictated the hand to be used, and, consequently, it is representative of natural tendency. If the right hand has been trained in manipulative skill, a little of its activity may be fairly discounted.

Single-letter cards may be put together to show how words are built from sounds. Emphasis on sounds is indispensable with non-readers because they have failed to secure an understanding of phonetics in the initial stages of learning to read. For older non-readers letters are helpful in analyzing long words into phonograms. The game of "capturing words" is interesting even to adults.

Word cards with pictures on the backs are helpful for a child who dislikes to be corrected. He can check himself until he is sure he can read the words. One boy who was too discouraged and listless to try earned five cards when he was told he could have any that he learned that day. Soon he knew all the cards and wanted to demonstrate his knowledge to everybody.

A window-shutter device is useful in training eye habits. This is a card in which a window is cut large enough to expose single words, phrases, or lines. Between the card and the page is placed a shutter, which can be twitched to reveal a glimpse of the words. A little practice brings skill in manipulation. With this device a pupil can be tested for quickness and accuracy of recognition of words. Standardized timing is of no advantage in this test because judgment rather than stereotyped procedure must be relied on. Eye-span can be estimated by arranging phrases of different lengths and exposing them by the shutter to find the number of words the pupil can recog-

nize with one blow of the eye. Sample phrases are: "my red ball," "little white horse," "give him some corn," "get to school on time," "the bird will fly away."

If it is desired to discover at which end of the line the pupil begins to read, a different type of phrase is used. The end words are comparable in length, familiarity, and interest. Some pupils read only the word at the right when the exposure is short. Typical phrases are: "cat and dog," "Mary Alice Jean," "Barbara is my sister," "glass of milk," "pretty little kitten," "tomorrow will be Christmas."

Training in phonetic sequence may be given by drawing the shutter slowly over words from left to right, giving the sounds as the letters appear. Thus the pupil is led toward the desired adaptation. Breaking up old habits is tedious work, especially when the pupil is daily practicing his bad technique in school, but the remedial work helps eventually. A child enjoys a sense of importance in sounding through and learning long words, such as "caterpillar," "dandelion," "lollypop," "buttercup." Incidentally he develops a phonetic method of attack on new words. A pupil who recognizes words as whole patterns or a pupil who scans words from right to left has no weapon of attack on new words. It is characteristic of such a reader that he reads one word at a time without phrasing, using a forward and back eye-motion with each word.

Children who have muscular imbalance and are unable to keep their eyes focused on the printed line are inclined to leave out words, to insert words from the line above or below, and to mix the order of words. In such cases, a "window" as long as the line, used without the shutter, helps in holding a true course. A plain card held below the line is about as effective.

Durrell, of Boston University, in lectures to classes of teachers suggests teaching words, then phrases, then sentences with a similar device. From Gates's word list,[1] which contains fifteen hundred words ranked for utility, interest, and difficulty, the teacher can make graded exercises using vocabularies of one hundred words at a time. After an exercise has been written, it can be broken up into

[1] Arthur I. Gates, *A Reading Vocabulary for the Primary Grades*. New York: Teachers College, Columbia University, 1926.

phrases. Using the "window-shutter," the child reads first the words, then the phrases, then the story with spaces between the phrases, and finally the story in usual form. By easy steps the discouraged child finds himself a reader.

Fernald and Keller suggest tracing as an aid in forming kinaesthetic associations.[1] The word to be learned is written in large letters. (When showing a left-handed child how to write, use the left hand. The child needs to see the process of the left hand starting at the outer edge of the page and moving toward his body. Any adult can do it well enough to demonstrate to an untrained child, and he will have more patience as a result of his experiment with his non-preferred hand.) The pupil then goes over the script with the forefinger of his preferred hand, but he does not use a pencil because its use would introduce a complicating element. He pronounces the word as he traces. He then takes pencil and reproduces the large script, going back to the sample and tracing with the *finger* as many times as is necessary to perfect his performance. He can then write the word in script of ordinary size, thus effecting the transfer of learning. The children enjoy learning through the fingers as the blind learn. One boy mystified his teacher by making hieroglyphics in the air with his left forefinger; he was learning his arithmetic from the blackboard by kinaesthetics developed into calisthenics.

Dearborn recommends the use of a typewriter as a means of establishing correct visual images of words.[2] For pupils who show confusion of direction, perhaps caused by unestablished cerebral dominance or by mixed handedness, typewriting has the advantage of involving both hands, and it has been helpful in cases where it has been consistently practiced.

Certain introspective testimony has been given by persons who had difficulty in learning to read but who made a sudden discovery of the concomitant order of letters and sounds. Some adults can recall the moment when this phenomenon happened to them. A

[1] G. M. Fernald and H. Keller, "The Effect of Kinaesthetic Factors in the Development of Word Recognition in the Case of Non-Readers," *Journal of Educational Research*, IV (December, 1921), 355–77.

[2] Walter F. Dearborn, "Teaching Reading to Non-Readers," *Elementary School Journal*, XXX (December, 1929), 267.

young man remembers that his mother placed his lettered blocks in the order that spelled his name. She had previously labored to teach him, but on that day he experienced a revelation, and he remembers the whole scene vividly. A recent honor graduate of Massachusetts Institute of Technology struggled with reading in the first grade. One day comprehension came, and before night he had read the book through. A girl of ten years is contending against reversals and disordering of letters. Her older sister had the same trouble up to the end of the third grade, when reading "came like a flash." All these cases have a family history of left-handedness, although the individuals consider themselves right-handed.

Usually, however, old habits are uprooted with difficulty, and the adaptation is made slowly. Non-readers appear to resist recognition of the method of reading. It seems that they deliberately refuse to try to see it, although they may be pleasantly acquiescent in outward behavior. This attitude enrages parents who try to tutor their children and who run into what seems to them obstinacy or a blank wall of stupidity. If a child has not comprehended the principle of phonetic and visual sequence, drill on phonetics and spelling not only is meaningless and futile, but, worst of all, the child is practicing his errors (trying to learn words as arbitrary symbols or reading them from the wrong end) and is fixing habits that will be harder and harder to break.

The principle of adaptation is illustrated by a boy of fourteen, of normal mentality, who was unable to understand the decimal system until the expedient of the speedometer was hit upon. In terms of miles the principle was clear, and he was able to make the adaptation and transfer it permanently to written decimals. In reading, however, no method availed. He would learn spelling for the day and could spell words like "lieutenant" and "microscope" backward as fast as forward, but both were forgotten in a few days because he had no phonetic cue to assist his memory. After studying "tides of oblivion" in an exercise, he rendered it under dictation as "tidium ibeam." When he wrote to his mother from camp asking for a bulb for his flashlight, she sent him a baseball glove. A peculiar circumstance of this case was that, when his mother was asked what his interests were and what he did in his spare time, she said, "He *reads*

all the time." It was true. Although he could not read a simple sentence correctly, he would scan pages getting the sense somewhat inaccurately. He was left-handed but could write equally badly with either hand, having been "converted" by two different teachers. He improved little under remedial instruction and is now lounging in an over-age class.

Experience with remedial reading indicates that drill without understanding is not only useless but harmful. The new habit must first be established by any method that the ingenuity of the teacher can invent. Glimmerings of understanding must be caught and capitalized. Devices may be used to illustrate technique if they show the pupil *how* to read, but they should not be used for drill until the child understands the technique of reading and is ready to improve his skill. Reading disability should be detected in the first grade by an informed and observant teacher and should have remedial treatment at once so that the handicap may not become permanent.

AN INTRODUCTION TO A CODE OF PROFESSIONAL ETHICS FOR SCHOOL PRINCIPALS

REINHOLD W. GOLL
James Elverson, Jr., School, Philadelphia, Pennsylvania

The adoption of "codes of ethics," "standards of conduct," or "principles of professional practice" has not been limited to the traditional professions. Within the last twenty years some three hundred professional, business, and trade groups have formulated and adopted such guides to action for their members. Educational organizations have participated spontaneously in this twentieth-century movement. A faithful and competent committee of the National Education Association has collated and summarized the codes of the many educational groups in an excellent report.[1]

Even a cursory reading of what might be called representative codes of numerous occupational groups reveals wide differences in emphasis of purpose. Perhaps the three chief purposes of a code of professional ethics, as presented in the many existing codes, are (1) service to the public, (2) protection of the professional group, and (3) personal aggrandizement of the individual members of the group. Although the codes of the educational organizations provide specifically for protection of the profession and its component members, the emphasis is unquestionably placed on service to the public. In the educator's code everything must contribute to the provision of the best service to the public. Naturally, other professional groups are equally concerned with the public welfare. It is most fitting, however, that such an important state function as education should be imbued with this spirit. A code of professional ethics for any group of the teaching body must be conditioned basically by a realization and an appreciation of the purposes of education in a democracy. It should serve as an effective means for fulfilling these

[1] "Final Report of the Committee on Ethics of the Profession—Abstract," *Proceedings of the National Education Association*, LXVII (1929), 179–90.

purposes and should acknowledge and fix the responsibility of the group to society.

A professional code for a person engaged in education must contribute directly or indirectly to the development of the pupils as co-operative and useful members of their communities and of the state, while at the same time it provides for their satisfaction and happiness. Although the educator's prime duty is the greatest possible development of the pupil, this development must be directed to fit the pupil for living in the present social order and to qualify him for participating in an improvement of that order.

When a code of ethics for any educational group is assembled, it is also vital to determine the exact functions of that group in order that the code may be constructed to serve those functions. The general aim of all groups is identical, but the natural evolution of education from the pupil-teacher-log stage has provided a specialization of function into three main groups: teaching, supervisory, and administrative. The foundations, therefore, of codes of professional ethics for these subgroups will be the same, but in practical formulation each code must be built in direct relation to the specific purposes of the particular group.

The duties of the elementary-school principal embrace all three of the specialized educational functions, with the emphasis very definitely on the supervisory function. The most recent specialization of the supervisory function to the improvement of teaching technique is commendable since it relegates the principal's duties of an administrative nature to their proper place, that is, the creation and maintenance of the best conditions for providing instruction. While the principal, therefore, has contact with many persons and agencies, the greater portion of his time and effort will be given to the classroom.

If ethics may be defined as the "principles of right action governing human relations," then a principal's code of professional ethics should present the principles governing his relations with all the agencies or persons with whom he has official contact. His code should contain sections governing his relations with (1) the community and its civic officials, (2) teachers, (3) pupils, (4) parents of pupils, (5) colleagues, (6) the superintendent and his associates,

(7) assistants other than teachers, (8) the board of education, (9) the profession at large, (10) commercial houses and enterprises, and (11) relations with himself—professional training and growth and personal character.

Before the actual formulation of a code of professional ethics for an educational group is attempted, it is well to consider the other objectives of such a code:

1. The crystallization in writing of the highest ideals and best practice of the profession. Ideals and practice thus fixed serve as constant reminders and as an authoritative guide to the profession, while affording an economical basis for future revision and enlargement.

2. The provision of the most efficient working agreement between the various educational groups and the agencies with which they officially come in contact.

3. An exposition for the general public of the ideals and attitudes motivating the profession.

4. The provision of a basis for the administration of professional justice.

5. The development of the proper professional attitudes in young candidates for the profession. Teacher-training institutions should provide instruction on the codes for the future members of the profession.

6. The enlargement of professional vision and the advancement of educational ideals.

7. The increase of love, zeal, and loyalty for the profession and pride and unity in it.

In presenting the following suggestions for a code of professional ethics for school principals, the writer wishes to acknowledge his great indebtedness to many organizations and individuals, who will doubtless recognize in some instances their ideas and possibly their words.

A Suggested Code of Professional Ethics for School Principals

Relations with the community and its civic officials

1. Co-operate fully with civic officials, the police, the firemen, and the courts.

2. Lend every possible assistance to welfare and relief organizations, such as the Red Cross, unemployment committees, and civic-betterment clubs.

3. Avoid political, social, and religious factional differences indigenous to the community. The peacemaker's rôle is ever beset with danger. After mature study do what you believe is right and just and to the best interests of all concerned. Personal convictions should not be expressed—unless some fundamental moral principle is involved—when such expression would lead to division rather than unity in the community.

4. The public is entitled to complete information concerning the administration, the objectives, the methods, and the results of its schools. There are no secrets in the school office, and principals should welcome the opportunity to win close public co-operation by explaining to visitors the functions and operation of the school. Forestall complaint and criticism by setting aside visiting days for the public throughout the school year.

5. Meet public criticism of the school with courtesy, calmness, and fact. Answer all serious inquiry promptly, candidly, and accurately.

6. Encourage plans to eradicate illiteracy in your community, and, when necessary or advisable, actively participate in the plan.

RELATIONS WITH TEACHERS

1. The improvement of classroom instruction is the most important function of the principal. In observing classroom work professionally, be guided by the following rules. (*a*) Genuine improvement of the teaching act can come only through real co-operation between the teacher and the principal and through the sharing of responsibility to this end. (*b*) Confer with the teacher, if advisable, both before and after observing her teaching. However, a private conference must always be held after the observation of teaching. (*c*) Point out the excellencies of the teacher's work. (*d*) Be frank and honest but considerate in evaluating the observed instruction. (*e*) Recommend ways to remove every weakness uncovered, and allow reasonable time and opportunity for improvement. (*f*) Make yourself as inconspicuous as possible during classroom observation. The pupils should not be aware of the purpose of your presence.

2. Count nothing but the merit of the service rendered in rating or ranking teachers for any purpose whatever. Offer to discuss freely a teacher's rating with her.

3. The teacher is definitely under the protection, guidance, and direction of the principal for the entire school day. The teacher should consult the principal first in matters clearly within his province. Vendors, salesmen, and irate parents must be denied access to the teacher. The teacher's home address is never to be given to anyone without her specific sanction.

4. To improve their service to the school, provide for and stimulate the teachers' independence, initiative, self-reliance, self-expression, and self-improvement. This rule implies an essential democracy in school control which effectively enables the teachers to participate actively in the formulation of school policy and the solution of school problems. Once determined, policies and procedures must be loyally supported by all. Faculty unity is powerfully reflected in the entire school organization.

5. Use only direct, open methods of getting information concerning a teacher's work.

6. All professional dealings with individual teachers must be strictly confidential on the part of both teacher and principal. Never discuss one teacher's deficiencies with another, nor criticize any teacher in the presence of pupils or other teachers. Discourage idle gossip about teachers, school officials, or policies. Warn teachers of persons "who know so many things that aren't so."

7. Inspire and encourage the exceptionally good teachers toward further study, experimentation, and preparation for higher positions and more responsibility. Keep such teachers informed of opportunities for advancement and greater service. Accept no money or other reward for aid or services in securing higher or better positions for teachers.

8. Respect the teacher's personality and experience. Offer suggestions and instructions in a pleasant, courteous manner, but be frank with the teacher in matters concerning professional standing, promotion, and tenure. Do not raise false hopes of a high rating for a teacher.

9. Teachers must be under no obligation, implied or explicit, to engage in private business relations with the principal or any other superior school official.

10. Every investigation or research undertaken by the principal or school authorities must have a worthy purpose, which should be made clear to the teachers involved.

11. Duties should be assigned as equitably as possible, but the various abilities, talents, and experience of the teachers must be capitalized to secure the most efficient operation of the school.

12. Teachers desiring transfers to other schools or changes in the type of teaching service rendered should be aided rather than hindered in making the change.

13. Never request unnecessary work from a teacher. The teacher should be familiar with the purposes of all work she is asked to do.

14. A teacher should be adjudged unsatisfactory only after real and persistent effort has been made to remedy her deficiencies. However, justice to the public and to the pupils demands that such a decision be made when warranted by a teacher's inefficiency, indifference, or disloyalty.

15. Keep the point of view of the teacher. This point of view can best be retained by frequent classroom teaching.

RELATIONS WITH PUPILS

1. Your greatest obligation, after the demands of society are satisfied, is to the children under your professional care.

2. In spirit as well as in fact, treat all children alike.

3. Assume the relation of a parent to your pupils.

4. Know your pupils, their abilities, deficiencies, and idiosyncracies. Develop this attitude in your teachers.

5. Respect the personality and personal feelings of the pupils.

6. One of your greatest tasks is the inculcation in your pupils of respect for law and order.

7. Your religious beliefs are not to be imposed on the pupils.

8. Direct the parents or guardians of indigent pupils to the proper social agencies for aid. In case of emergency need the school itself should provide essential help until other help is located or organized. Such help should be provided only after careful investigation and in such a manner as not to relieve the parents of their responsibility in the care of their children.

9. Be ever alert to find and provide special opportunities for broadening the cultural, moral, and environmental background of your pupils through such agencies as school assemblies, visits to temporary and permanent community exhibits of various types, excursions to places of historic and natural interest, and inspections of local manufacturing and business establishments.

RELATIONS WITH PARENTS OF PUPILS

1. Organize a parent-teachers' association, the purpose of which is to acquaint parents with the aims, methods, and outcomes of education and to give teachers a better understanding of their pupils and their needs. In some communities the parents may be in greater need of enlightenment than the pupils. Parents must be made to realize that theirs is the prime responsibility for training their children and that the school is more than anxious to co-operate with them to this end.

2. Co-operate with parents in solving special problems of particular children.

3. Meet criticism from parents with courtesy and open-mindedness. Make parents feel that they belong to the school organization.

4. Do not discuss the physical, mental, moral, or financial limitations of your pupils in such a way as to embarrass unnecessarily the pupils or their parents. Nevertheless, exercise the utmost candor, as well as tact, in dealing with parents on matters of real importance concerning their children.

5. Do not keep parents or other visitors to your office waiting to see you, either through desire to impress them with your importance or through sheer indolence on your part or on the part of your office force.

RELATIONS WITH COLLEAGUES

1. Do not criticize unfavorably your predecessor, your successor, or your fellow-principals, but extend credit to them when due.

2. Make changes in the routine established by your predecessor only after carefully determining their necessity, and make the changes in such a way as not to reflect on his competency. If possible, spend a day or two with your predecessor before assuming control in order to familiarize yourself thoroughly with the established routine and attitudes.

3. Ease the way for your successor in every possible manner. Leave the records and routine and administrative matters in such condition that they will not require his immediate attention.

4. Take the lead in developing and maintaining friendship and understanding with principals of adjoining schools, remembering always that the interests of your pupils come before personal comfort and affability.

5. Join with your fellow-principals in solving the problems peculiar to your schools and school community. Have your school, your methods, and devices open to your fellow-principals at all times, and join with them in any movement designed to promote efficiency in the administration and supervision of your school.

6. Do not assume any authority that properly belongs to a fellow-official.

7. Participate with your colleagues in movements designed to better the professional conditions surrounding your work. When three-quarters of your group has reached a definite conclusion, you are bound not to oppose the policy in any way unless some moral principle is involved.

RELATIONS WITH THE SUPERINTENDENT AND HIS ASSOCIATES

1. Since the superintendent is responsible for making and effecting educational policies, principals should carry out his purposes in spirit as well as in action. However, opportunity must be given principals to play an articulate part in the formulation of educational policy. "A school system in which only one mind is allowed to think, and only one voice to speak, is ethically as well as educationally indefensible."

2. Address all communications, particularly complaints, to the superintendent through the proper official channels. Do not "go over the head" of your immediate superior officials.

3. Keep the superintendent fully informed of conditions in your school and community that may merit his consideration.

4. Accept cheerfully any special duty to which the superintendent assigns you by reason of your special interests, training, or experience.

5. Build up the confidence of the community, the board of education, the teachers, and the pupils in the professional policies, the ability, and the educational soundness of the superintendent. This advice is not to be interpreted to mean that the principal should become an educational, social, or political henchman of the superintendent.

6. Seek professional advancement through the established channels solely on the basis of your professional fitness and merit.

RELATIONS WITH ASSISTANTS OTHER THAN TEACHERS

1. *The building custodian.*—Co-operate with the custodian and his helpers in maintaining the school plant as a good example of cleanliness and sanitation. The greatest help that can be offered the custodian is to develop in the pupils a proper respect for the school property and to train them in the correct use of the building facilities. Such minor matters as closing windows, adjusting shades, and raising desk seats at the end of the day are of great service to the custodian's

force. Regard the custodian as a member of the school staff, and place your relations with him on the same plane as your relations with teachers. Do not condone laziness, inefficiency, uncleanliness, or unethical conduct in the custodian's force.

2. *The school clerk or secretary.*—Officiousness is the besetting sin of secretaries. Their intimacy and familiarity with the details of the operation of the school may lead them to assume authority they do not have—to the impairment of the morale and efficiency of the school. The principal should extend to the clerk the same professional consideration he extends to the other members of his staff. At the same time, he should provide her with specific instructions as to her relations with the other members of the staff and with visitors to the school.

3. *Subject supervisors.*—The function of these supervisors is identical with the prime function of the principal, namely, the improvement of instruction. Co-operate fully with supervisors for the attainment of this worthy end. There must be harmony in essential method between the supervisor and the principal. Where differences arise, they should be adjusted amicably before the proper authorities. In this relationship, however, the principal must not forget his responsibility as the executive head of the school.

4. *School medical inspectors and school nurses.*—Like the subject supervisors, the medical inspector and the nurse are usually under the more or less immediate direction of the superintendent. The principal should become thoroughly familiar with the functions of these officers and co-operate to make their work most effective. Here again the principal must remember his prime responsibility to the children under his professional care.

5. *The attendance officers.*—Relations with the attendance officers should be the same as those with teachers.

RELATIONS WITH THE BOARD OF EDUCATION

1. In every honorable way strive to establish and increase public confidence in the integrity and usefulness of the board of education. If the actions and attitude of the board clearly and persistently prevent the members of the profession employed by it from serving the best interests of the public and the pupils and if repeated efforts to remedy the situation have been made without avail, then a dignified appeal should be made to the public or other proper authorities.

2. Recognize the legal authority of the board, and be loyal to its policies established in accordance therewith. Present pleas for changes in policy or protests to the board in a dignified manner through its designated officials.

3. Recognize the authority of the various executive heads of the school system appointed by the board, and extend to them your full co-operation at all times.

4. Support actively the retention of educational matters in professional hands.

5. Be friendly and business-like with board members, always remembering that ultimate responsibility in school matters rests with them.

6. Do not embarrass the board by publicly predicting its action. The first public announcement of board decisions must come from the board itself.

7. Never violate a contract with the board, nor permit any individual or company to violate contracts or shave specifications in your school.

8. Keep the petty financial accounts of the school in an orderly, business-like manner, open for inspection at any time. Issue regular statements of these accounts.

RELATIONS WITH THE PROFESSION AT LARGE

1. Hold active membership in local, state, and national educational organizations. Many desirable objectives in the advancement of the schools can be achieved only by united group action. These organizations offer the opportunity of sober consultation on your problems and the problems of the profession.

2. Protect legitimate professional interests, and consistently oppose political or other unprofessional interference with the operation of the schools.

3. Participate in and stimulate educational research to the full extent of your ability and resources. Genuine educational research seeks to determine the objectives of education in a democracy and the most effective means for attaining these objectives. This purpose necessitates the determination of the real nature of the learner and the influence of environmental factors in modifying this original nature. It aims thus to provide a scientific basis for education. Share freely the fruits of your own inquiry.

4. Forward in a dignified way the movement for an adequate professional compensation—one that will provide for maintenance in comfort and security, for recreation, improvement, retirement, and savings. However, service must never be limited because of low compensation.

5. By your own fitness, conscientiousness, and actions build respect for the profession.

6. Assist in recruiting the best prospective teaching material for the profession.

7. Initiate and further the movement for better schools, for financial support of education, adequate equipment, and proper working conditions for the profession, but base such pleas on fact rather than fancy.

8. Expose corrupt and unethical practice in the schools wherever found.

9. Contribute to movements for the support and protection of disabled and superannuated teachers.

10. Consider all persons engaged actively in the work of the schools as earnest fellow-workers in a great cause.

11. Answer professional questionnaires promptly and fully.

12. Co-operate to the full extent of your resources with other institutions of learning.

RELATIONS WITH COMMERCIAL HOUSES AND ENTERPRISES

1. The principal must not profit financially in the administration of his school: (*a*) Do not accept unearned commissions or royalties. (*b*) Do not solicit or sell sample textbooks. (*c*) Do not write or sign testimonials for salesmen. (*d*) Do not act as agent for, or receive commissions or royalties or anything else of value for, any books or supplies in the selection of which you exercise official decision.

2. Do not compete with local business in any way by selling anything to the pupils or the community. The single exception is the operation of a school lunchroom, which must be operated on a non-profit basis solely for the convenience and health of the pupils.

3. Conduct all business relations according to accepted business procedure.

4. Do not support teachers' agencies or beneficial societies which have been convicted of unethical practice.

5. Protect teachers and pupils from all business salesmen and solicitation in school. The host of vendors and salesmen, peddling everything from "pretzels with mustard" to bootleg woolens, is legion and must be kept away from the school.

PROFESSIONAL TRAINING AND GROWTH AND PERSONAL CHARACTER

1. Secure standard professional training.

2. Keep abreast of educational trends and developments. To be efficient, one cannot remain static in professional knowledge or practice. There must be conscious, persistent, well-directed effort to enlarge professional outlook. Attend the gatherings of local, state, and national educational organizations, and read their publications. Familiarize yourself with the work of your state department of education and the United States Office of Education. Plan and follow a definite program of reading in professional books and magazines. Utilize the indexes to current educational literature furnished by the various digests, guides, and the national government.

3. Become an expert in some particular phase of your work.

4. Accept service on any educational committee for which you are qualified by training and experience.

5. Visit other schools and school systems in order to make an exchange of educational practice and outlook.

6. Stimulate educational research and participate therein.

7. Seek general mental growth and increased physical health and vigor as a sound foundation for professional development.

8. The principal should prepare and follow term, monthly, weekly, and daily programs of personal professional activity.

9. The personal character of the principal must be above reproach.

10. There are certain desirable traits of character which the principal must

possess to vitalize his action. Among these are courtesy, patience, sympathy, courage, open-mindedness, and conscientiousness. The principal should never allow personal desire to overshadow justice in any of his professional relationships, nor be spiteful, jealous, or prejudiced. He should neither bulldoze nor be bulldozed. While the principal should be courteous and tactful, he must never equivocate with principle.

The method of origin, adoption, and operation of such a code should serve to vitalize and systematically revitalize the promulgated principles. The code should originate as a co-operative enterprise of the principals in a city, county, or state. Each article should be voted on, preferably at meetings or conventions. An article should be included in the code only after receiving a three-quarters vote.

A committee on professional ethics should then be designated and assigned three specific functions: First, the committee should seek the approval of the code by the related educational groups. Each article should receive this approval before being considered officially incorporated in the code. Second, the committee should serve as a clearing-house for all matters pertaining to professional ethics, as a depository for illustrations of the various principles, and as a body to plan and direct a biennial revision of the code. Third, the committee should, when the occasion arises, act as a judicial body in matters involving professional ethics.

WHAT PRIMER SHALL I USE NEXT?

SYDNEY HARRING
Pennsylvania State College, Harrisburg, Pennsylvania

The question of what primer shall be used next perplexes every teacher of beginning reading from November until June. After the basic book has been read, first-grade pupils read from four to twenty other primers in the order in which chance or accessibility at the moment may decide. Since the number of different words used in primers varies from two hundred to over five hundred to a primer and since the range in total word content is from two thousand to over eight thousand words, it is obvious that these books are very unequal in difficulty. The thoughtful teacher feels that there should be some guide to enable her to present the primers in such an order that each would supplement the preceding book. Authors of primers and writers of courses of study also state that primers should supplement each other and that the words taught should be those most frequently used. In one handbook for teachers of beginning reading the authors name one supplementary primer and say that pupils should read the book mentioned "and other primers whose vocabulary correlation . . . . is high."[1] In a school system in which the pupils are required to know a definite number of words at sight before they are promoted, it is said that the words "are those most frequently used in primers and first readers."[2]

While information with regard to the total number of different words used, the total word content, the average amount of repetition, and the average number of new words on a page can be secured from the publishers of any given book, no data have been compiled to show whether the vocabularies of given books are identical or wholly different or to show the extent to which the books may sup-

[1] William Scott Gray and Edna B. Liek, *Teacher's Guidebook for the "Elson Basic Readers,"* Pre-Primer and Primer, p. 140. Chicago: Scott, Foresman & Co., 1931.

[2] Mabel Vogel Morphett and Carleton Washburne, "When Should Children Begin To Read?" *Elementary School Journal*, XXXI (March, 1931), 497.

plement each other, except in the few cases where authors and publishers have attempted to furnish a supplementary primer to follow the so-called "basic book." In order to furnish information with regard to the troublesome question "What primer shall I use next?" the writer secured the percentage of words common to any two of fifteen well-known primers. The primers of the following series were selected for the study.

1. Clara B. Baker and Edna D. Baker, *Bobbs-Merrill Readers*. Indianapolis, Indiana: Bobbs-Merrill Co., 1923.
2. Emma Miller Bolenius, *The Boys' and Girls' Readers*. Boston: Houghton Mifflin Co., 1923.
3. William H. Elson and Lura E. Runkel, *Child-Library Readers*. Chicago: Scott, Foresman & Co., 1923.
4. Marjorie Hardy, *The Child's Own Way Series*. Chicago: Wheeler Publishing Co., 1926.
5. Frank N. Freeman, Grace E. Storm, Eleanor M. Johnson, and W. C. French, *Child-Story Readers*. Chicago: Lyons & Carnahan, 1927.
6. William H. Elson and Lura E. Runkel, *The Elson Readers*. Chicago: Scott Foresman & Co., 1927.
7. Fannie Wyche Dunn, Franklin T. Baker, and Ashley H. Thorndike, *Everyday Classics*. New York: Macmillan Co., 1922.
8. Mabel Guinnip LaRue, *The F-U-N-Book*. New York: Macmillan Co., 1923.
9. Bessie Blackstone Coleman, Willis L. Uhl, and James Fleming Hosic, *The Pathway to Reading*. Newark, New Jersey: Silver, Burdett & Co., 1925.
10. Catherine T. Bryce and Rose Lees Hardy, *Newson Readers*. New York: Newson & Co., 1927.
11. Clare Kleiser, William Louis Ettinger, and Edgar Dubs Shimer, *The Progressive Road to Reading*. Newark, New Jersey: Silver, Burdett & Co., 1917.
12. Margaret Free and Harriett Treadwell, *Reading-Literature*. Evanston, Illinois: Row, Peterson & Co., 1910.
13. Eva A. Smedley and Martha C. Olsen, *The New Primer*. Chicago: Hall & McCreary Co., 1926.
14. Sidney G. Firman and Ethel H. Maltby, *The Winston Readers*. Philadelphia: John C. Winston Co., 1926.
15. Ethel H. Maltby and Sidney G. Firman, *Winston Companion Readers*. Philadelphia: John C. Winston Co., 1922.

During the process of finding the percentages of common words, information was also obtained with regard to the size, frequency, and usefulness of the vocabularies. The number of different words, the total word content, the average amount of repetition, and the aver-

age number of new words on a page in each of the fifteen books are shown in Table I. The table should be read as follows: The primer of *Bobbs-Merrill Readers* has 196 different words. Its total word content is 5,044. Each word is repeated an average of 25.7 times, and there is an average of 1.4 new words to a page. This information is useful in selecting the basic book as well as the supplementary primers. The material collected furnishes data by which these prim-

TABLE I

INFORMATION REGARDING VOCABULARIES OF FIFTEEN PRIMERS

Name	Number of Different Words	Total Number of Words	Average Number of Times Each Word Is Repeated	Average Number of New Words to a Page
1. Bobbs-Merrill Readers	196	5,044	25.7	1.4
2. Boys' and Girls' Readers	443	5,570	12.6	3.6
3. Child-Library Readers	423	8,696	20.6	3.0
4. Child's Own Way Series	431	5,027	11.7	3.0
5. Child-Story Readers	408	3,866	9.5	3.3
6. Elson Readers	309	6,607	21.4	2.3
7. Everyday Classics	281	4,661	16.6	2.7
8. F-U-N Book	487	4,248	8.7	4.5
9. Pathway to Reading	301	5,393	17.9	2.5
10. Newson Readers	255	5,471	21.5	2.1
11. Progressive Road to Reading	311	3,207	10.3	3.4
12. Reading-Literature	208	4,314	20.7	1.8
13. New Primer	292	4,520	15.5	2.3
14. Winston Readers	317	3,637	11.5	2.9
15. Winston Companion Readers	337	6,743	20.0	2.4

ers may be arranged, on the basis of vocabulary, in the most effective sequence for supplementary use.

Some very interesting and surprising facts appeared in connection with this study. The total word content of the fifteen books is 77,004 words, but only 1,260 different words occur. Of this number, 124 words occur only once, and 538 words occur in only one of the books. In the fifteen books there are 124 words which occur only once. Perhaps the most surprising fact is that only thirty-four words are common to all the books. These words are:

a	can	from	is
and	come	good	it
are	do	I	little
big	for	in	make

man	saw	that	will
me	see	the	with
my	so	to	you
not	some	up	
on	thank	want	

A large number of words appear in each book which are not found in any of the other books. The number of these words is shown in Table II. By using this information, a teacher may select a primer

TABLE II

NUMBER OF WORDS IN EACH OF FIFTEEN PRIMERS WHICH DO NOT APPEAR IN ANY OF THE OTHER FOURTEEN

Name	Number of Words
1. Bobbs-Merrill Readers	17
2. Boys' and Girls' Readers	80
3. Child-Library Readers	26
4. Child's Own Way Series	66
5. Child-Story Readers	44
6. Elson Readers	11
7. Everyday Classics	34
8. F-U-N Book	77
9. Pathway to Reading	19
10. Newson Readers	24
11. Progressive Road to Reading	35
12. Reading-Literature	24
13. New Primer	29
14. Winston Readers	17
15. Winston Companion Readers	32

which contains few, or many, words not yet presented. For instance, pupils who have read all the primers listed except that of the *Boys' and Girls' Readers* may learn eighty additional words by reading this book. Those who have read all except the *Elson Readers* will have much practice on known words and encounter only eleven new words.

When the usefulness of the words was checked according to Thorndike's word list[1] and Gates's *A Reading Vocabulary for the*

[1] Edward L. Thorndike, *The Teachers' Word Book*. New York: Teachers College, Columbia University, 1921.

TABLE III

PERCENTAGE OF WORDS USED IN COMMON IN ANY TWO OF FIFTEEN PRIMERS*

Primer Compared	Bobbs-Merrill Readers	Boys' and Girls' Readers	Child-Library Readers	Child's Own Way Series	Child-Story Readers	Elson Readers	Everyday Classics	F-U-N Book	Pathway to Reading	Newson Readers	Progressive Road to Reading	Reading-Literature	New Primer	Winston Readers	Winston Companion Readers
1. Bobbs-Merrill Readers	100	28	27	25	24	36	36	26	30	40	37	42	33	36	36
2. Boys' and Girls' Readers	62	100	46	51	41	60	57	43	60	61	55	59	51	55	60
3. Child-Library Readers	59	44	100	48	39	84	58	47	61	62	53	62	57	52	61
4. Child's Own Way Series	56	49	49	100	41	61	57	45	63	62	67	63	55	54	62
5. Child-Story Readers	49	38	38	39	100	46	47	36	49	56	43	48	43	40	47
6. Elson Readers	56	42	61	44	35	100	65	44	56	57	50	53	52	46	54
7. Everyday Classics	51	36	38	37	32	59	100	37	48	48	42	50	43	48	45
8. F-U-N Book	65	47	55	51	43	69	63	100	61	66	57	66	55	61	66
9. Pathway to Reading	46	41	44	44	36	54	51	38	100	56	49	49	49	44	50
10. Newson Readers	53	35	37	37	35	47	43	35	48	100	63	47	45	42	48
11. Progressive Road to Reading	58	38	39	41	33	50	47	36	50	51	100	56	49	49	51
12. Reading-Literature	44	27	30	30	25	36	37	28	34	38	37	100	35	43	43
13. New Primer	49	33	39	37	31	49	45	33	48	52	46	50	100	44	52
14. Winston Readers	58	39	39	40	31	47	54	39	48	52	50	65	48	100	67
15. Winston Companion Readers	63	45	48	48	39	58	54	46	56	63	56	69	45	68	100

* The table is to be read as follows: 100 per cent of the words in the primer of the *Bobbs-Merrill Readers*, 28 per cent of the words in the primer of the *Boys' and Girls' Readers*, 27 per cent of the words in the primer of *Child-Library Readers*, and so on, are found in the primer of the *Bobbs-Merrill Readers*.

TABLE IV

RANKINGS OF FIFTEEN PRIMERS ACCORDING TO PERCENTAGE OF WORDS USED IN COMMON*

	Bobbs-Merrill Readers	Boys' and Girls' Readers	Child-Library Readers	Child's Own Way Series	Child-Story Readers	Elson Readers	Everyday Classics	F-U-N Book	Pathway to Reading	Newson Readers	Progressive Road to Reading	Reading-Literature	New Primer	Winston Readers	Winston Companion Readers
1. Bobbs-Merrill Readers...	1	11	12	14	15	6.5	6.5	13	10	3	4	2	9	6.5	6.5
2. Boys' and Girls' Readers..	2	1	13	11.5	15	5	8	14	5	3	9.5	7	11.5	9.5	5
3. Child-Library Readers...	7	14	1	12	15	2	8	13	5.5	3.5	10	3.5	9	11	5.5
4. Child's Own Way Series..	9	12.5	12.5	1	15	7	8	14	3.5	5.5	2	3.5	10	11	5.5
5. Child-Story Readers.....	3.5	13.5	13.5	12	1	8	6.5	15	3.5	2	9.5	5	9.5	11	6.5
6. Elson Readers.....	5.5	14	3	12.5	15	1	2	12.5	5.5	4	10	8	9	11	7
7. Everyday Classics.....	3	14	11	12.5	15	2	1	12.5	6	6	10	4	9	6	8
8. F-U-N Book	6	14	11.5	13	15	2	7	1	8.5	4	10	4	11.5	8.5	4
9. Pathway to Reading.....	9	13	11	11	15	3	4	14	1	2	7	7	7	11	5
10. Newson Readers.....	3	14	11.5	11.5	14	6.5	9	14	4.5	1	2	6.5	8	10	4.5
11. Progressive Road to Reading.....	2	13	12	11	15	6.5	10	14	6.5	4.5	1	3	8.5	8.5	4.5
12. Reading-Literature.....	2	14	11.5	11.5	15	8	6.5	13	10	5	6.5	1	9	3.5	3.5
13. New Primer.....	5.5	13.5	11	12	15	5.5	9	13.5	7	2.5	8	4	1	10	2.5
14. Winston Primer.....	4	13	13	11	15	10	5	13	8.5	6	7	3	8.5	1	2
15. Winston Companion Readers.....	4.5	13.5	10.5	10.5	15	6	9	12	7.5	4.5	7.5	2	13.5	3	1

* The table is to be read as follows: The primer of *Bobbs-Merrill Readers* ranks 1 with itself, 2 with the primer of *Reading Literature*, 3 with *Newson Readers*, etc. That is, if the primer of the *Bobbs-Merrill Readers* is the basic reader, it should be followed by the primer of *Reading-Literature*, *Newson Readers*, etc., as supplementary books.

Primary Grades,[1] it was found that, of the 1,260 different words, 344 are not in the Gates list of 1,500 words and that 222 are not in Thorndike's first 2,500, while 66 do not appear in the Thorndike list of 10,000 words.

Table III shows the percentage of words used in common in any two primers of this study. Table IV ranks the books according to the percentage of words used in common. From either of these tables the teacher may arrange a sequence for any two primers or for all fifteen which will enable her to present the less difficult or the more difficult books according to the needs of her pupils. For example, if the primer of the *Bobbs-Merrill Readers* is the basic book and the teacher, having access to all the other books here listed, wishes to use the book which will provide the fewest new words, she will select the primer of *Reading-Literature*, which contains 42 per cent of the words used in the primer of the *Bobbs-Merrill Readers*. If she wishes to use the book which will present the greatest number of new words, she will use the primer of the *Child-Story Readers* since it contains only 24 per cent of the words used in the primer of the *Bobbs-Merrill Readers*.

In Table IV the books are ranked on the basis of the percentage of words used in common as shown in Table III. To use Table IV, the teacher finds at the left side of the table the name of the book which she wishes to supplement. The numbers following the name indicate the order in which the vocabulary of this book is supplemented by the other fourteen primers.

[1] Arthur I. Gates, *A Reading Vocabulary for the Primary Grades*. New York: Teachers College, Columbia University, 1926.

MUCH ADO ABOUT ZERO

JOHN W. DICKEY
New Jersey State Normal School, Newark, New Jersey

The zero integer is one of the great arithmetic trouble-makers in the elementary school.[1] In recognition of this difficulty, modern professionalized arithmetic recommends that operations involving zero be taught after the operations involving the other integers have been presented.[2]

The writer's experience with teachers in service and with students in training reveals a lack of confidence when operating with the zero, particularly in division. Both teachers in service and students in training explain that they have memorized rules which govern the operation of the zero, and they also contend that such irrational rules are unfortunate.

The history of the zero integer seems to show that this integer is inherently difficult. Although the exact date of its origin is uncertain,[3] the date is thought to be not less than seven centuries later than that of the other Hindu integers. The earliest undoubted date of origin of the zero is 876 A.D. Operations involving zero were not fully understood at that time, and division involving zero was not fully understood even as late as the twelfth century. The ways of writing zero have varied less than those of any other integer, the only symbols being a solid dot, a large O, and the present o. In contrast to this uniformity of representation, there has been a great variation in its nomenclature. Zero has been called by more than a dozen names, and the name is not settled even yet. Three common names are "zero," "cipher," and "naught." This variability in

[1] Charles Hubbard Judd, *Psychological Analysis of the Fundamentals of Arithmetic*, p. 13. Supplementary Educational Monographs, No. 32. Chicago: Department of Education, University of Chicago, 1927.

[2] Robert Lee Morton, *Teaching Arithmetic in the Primary Grades*, p. 121. Newark, New Jersey: Silver, Burdett & Co., 1927.

[3] David Eugene Smith, *History of Mathematics*, Vol. II. Boston: Ginn & Co., 1925.

name compared with the stability in written form may again point to the difficulty in understanding the zero.

The specific aim of this article is fourfold: (1) to show inductively why zero times any number is zero, (2) to show inductively why any number times zero is zero, (3) to show inductively why zero divided by any number is zero, and (4) to show inductively why a number cannot be divided by zero. If this fourfold aim is realized, rules may no longer appear irrational to teachers and may, as a consequence, seem less irrational to inquisitive pupils found in classrooms.

Zero is unique in computation. In the process of addition zero is the only integer that can be used in addends and also be the sum. In subtraction it is the only integer that can be taken from itself and also appear as the difference. In multiplication, when zero is used either as the multiplier or as the multiplicand, the product is also zero regardless of the other factor. In division it is the only integer used as a dividend that always has itself as the quotient for any divisor except zero, and it is the only integer which cannot be used alone as a divisor. The unique properties of zero are quite evident in addition and subtraction. In multiplication, which is high-powered addition, and in division, which is high-powered subtraction, the evidence is not immediately apparent. The remainder of this article attempts to give some insight into these curious multiplication and division truths.

First will be considered inductively the product value of zero times any number. Since any number may be chosen as the multiplicand, the integer 8 is used in Table I. In this table the product (p) grows smaller and smaller as the multiplier (m) becomes less and less. The diminutions of m and p occur in the same proportions. For example, while m goes from 4 to 2, one-half of its value, p goes from 32 to 16. This last value is again one-half of the first value. If m and p were two automobiles that were finishing a race, they would come to a standstill at the same time. As the multiplier finally becomes zero, the product also becomes zero.

The line reading "$M=8$" in Figure 1 is a graphic representation of the data in Table I. The fact that this line pierces the zero origin means that the product value (p) is zero if the multiplier value (m) is zero when the multiplicand value (M) is 8. The lines also pierce

the zero origin when the multiplicand is 4 (shown by the line reading "$M=4$") and when the multiplicand is 16 (shown by the line reading "$M=16$"). Many other lines, each having another value for M, might be drawn similar to these three, but all lines would pierce the zero origin. In general, it is seen that the product value is zero when the multiplier value is zero regardless of the value of the multiplicand.

TABLE I

EXAMPLES IN MULTIPLICATION SHOWING THAT, AS THE MULTIPLIER APPROACHES ZERO, THE PRODUCT ALSO APPROACHES ZERO

Multiplier (m)*	Multiplicand (M)	Product (p)
5	8	40
4	8	32
3	8	24
2	8	16
1	8	8
0.1	8	0.8
0.01	8	0.08
0.001	8	0.008
0.0001	8	0.0008
0.00001	8	0.00008
etc.	.	.
.	.	.
.	.	.
.	.	.
0	8	0

* Common fractions may be substituted for decimal fractions if the former are better understood.

An inductive approach to the problem of zero multiplied by any number may be secured from the data presented in Table II. This table shows that the product value grows smaller and smaller as the multiplicand value becomes less and less until, when the multiplicand value is zero, the product value is also zero.

The line reading "$m=8$" in Figure 2 is a graphic representation of the data in Table II. The fact that this line pierces the zero origin means that the product value (p) is zero if the multiplicand value (M) is zero when the multiplier value (m) is 8. The lines also pierce the zero origin when the multiplier is 4 (shown by the line reading "$m=4$") and when the multiplier is 16 (shown by the line reading "$m=16$"). Many other lines, each having another value

for m, might be drawn similar to these three, but all lines would pierce the zero origin. In general, it is seen that the product value

TABLE II

EXAMPLES IN MULTIPLICATION SHOWING THAT, AS THE MULTIPLICAND APPROACHES ZERO, THE PRODUCT ALSO APPROACHES ZERO

Multiplier (m)	Multiplicand (M)*	Product (p)
8	5	40
8	4	32
8	3	24
8	2	16
8	1	8
8	0.1	0.8
8	0.01	0.08
8	0.001	0.008
8	0.0001	0.0008
8	0.00001	0.00008
etc.	.	.
.	.	.
.	.	.
.	.	.
8	0	0

* Common fractions may be substituted for decimal fractions if the former are better understood.

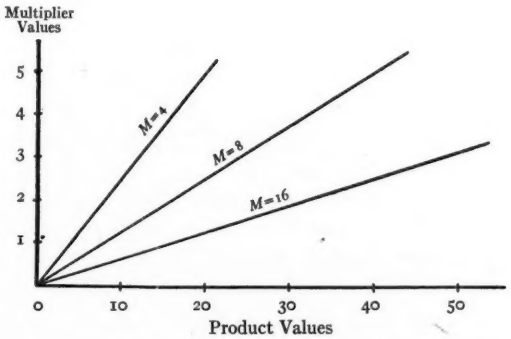

FIG. 1.—Showing that, as the multiplier values approach zero, the product values also approach zero regardless of the value of the multiplicand.

is zero when the multiplicand value is zero regardless of the value of the multiplier.

A third, and more difficult, problem is that of zero divided by any

number. Since any number may be chosen as the divisor, 8 will again be used. Table III shows that the quotient value (Q) grows

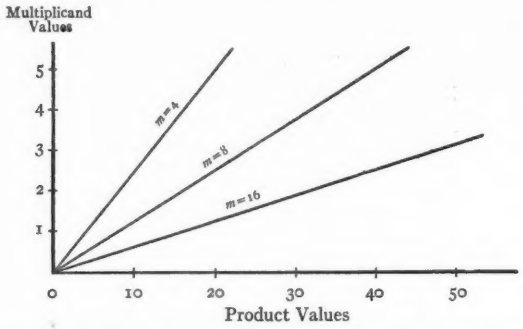

FIG. 2.—Showing that, as the multiplicand values approach zero, the product values also approach zero regardless of the value of the multiplier.

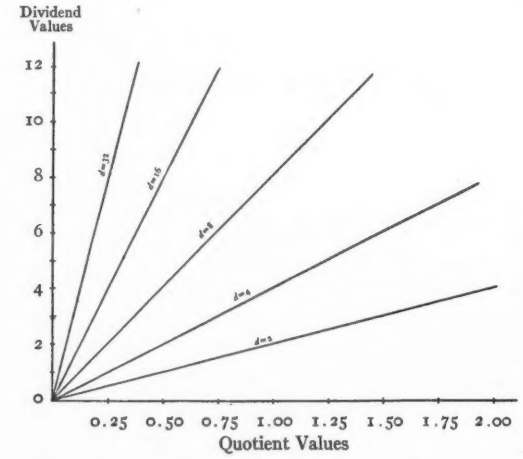

FIG. 3.—Showing that, as the dividend values approach zero, the quotient values also approach zero regardless of the value of the divisor.

smaller and smaller as the dividend value (D) becomes less and less. The diminutions of D and Q occur again in the same proportion. The automobile story applies as well to D and Q as it did to m and p. As

the dividend finally becomes zero, the quotient also becomes zero.

The line in Figure 3 reading "$d=8$" is a graphic representation of the data in Table III. The fact that this line pierces the zero origin means that the quotient value (Q) is zero if the dividend value (D) is zero when the divisor value (d) is 8. The lines also pierce the zero origin when the divisor values are 2 (shown by the line reading "$d=2$"), 4, 16, and 32 (each divisor being represented by a line).

TABLE III

EXAMPLES IN DIVISION SHOWING THAT, AS THE DIVIDEND APPROACHES ZERO, THE QUOTIENT ALSO APPROACHES ZERO

Dividend (D)*	Divisor (d)	Quotient (Q)*
12	8	1.5
10	8	1.25
8	8	1.00
6	8	0.75
4	8	0.50
2	8	0.25
1	8	0.125
0.1	8	0.0125
0.01	8	0.00125
0.001	8	0.000125
0.0001	8	0.0000125
etc.	.	.
.	.	.
.	.	.
.	.	.
0	8	0

* Common fractions may be substituted for decimal fractions if the former are better understood.

Many other lines, each having another divisor value, might be drawn similar to the five shown, but all lines would pierce the zero origin. In general, it is seen that the quotient value is zero when the dividend value is zero regardless of the value of the divisor.

There is one more fact which is profoundly interesting, namely, that a number cannot be divided by zero. Why? Again the inductive approach is used, and the outcome is shown in Table IV and Figure 4. In this table it is seen that the quotient value (Q) grows larger and larger as the divisor value (d) becomes less and less. The enlargement of Q is proportional to the diminution of d. This is seen, for example, where d goes from 8 to 4, one-half of its value, Q goes

from 12.5 to 25.0, two times the first value. It is clear that the quotient grows large while the divisor grows small. It can be said that, as d approaches zero, Q approaches infinity.

In Figure 4 the line reading "$D=100$" is a graphic representation of the data in Table IV. This line shows small quotient values when the divisor values are large; but, when the divisor values approach zero, this line darts off into space very rapidly. Theoretically, the

TABLE IV

EXAMPLES IN DIVISION SHOWING THAT, AS THE DIVISOR BECOMES SMALLER, THE QUOTIENT APPROACHES INFINITY

Dividend (D)	Divisor (d)*	Quotient (Q)*
100	10	10.0
100	8	12.5
100	6	16.66
100	4	25.0
100	2	50.0
100	1	100.0
100	0.1	1,000.0
100	0.01	10,000.0
100	0.001	100,000.0
100	0.0001	1,000,000.0
etc.	.	.
.	.	.
.	.	.
.	.	.
100	0	Infinity (∞)

* Common fractions may be substituted for decimal fractions if the former are better understood.

lines reading "$D=100$," "$D=500$," and "$D=1{,}000$" meet the vertical-scale line at infinity. It is seen that the line for every value of the dividend behaves in the same way, the only difference being that the larger the value of the dividend, the less sharp is the bend in the curve. In general, then, if an attempt were made to divide any number by zero, the quotient value would be infinity. The writer hastens to add that, since we do not know what infinity is, we cannot divide by zero. It may appear strange at first to say that infinity (∞) is not a number, but the stupendously rapid increase in the quotient as the divisor finally becomes zero shows that infinity is greater than any quantity which the human mind is able to grasp. Infinity symbolizes this increasing of the quotient value beyond all limits.

The four important cases dealt with in this article are not the only ones that can be treated in this way. The method is also applicable to the intuitive proof of other examples, such as the following: (1)

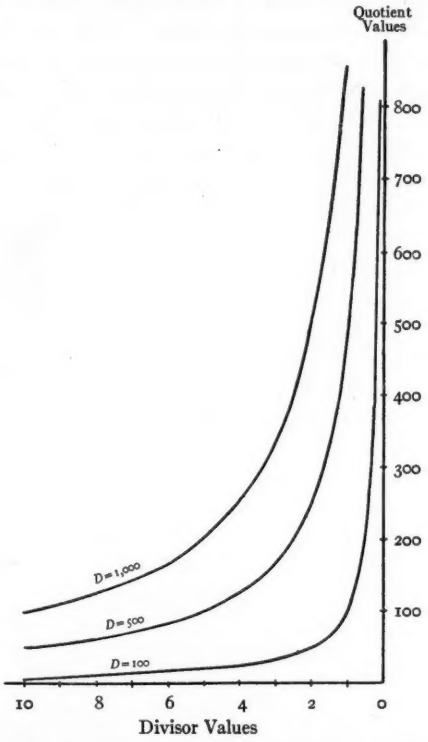

FIG. 4.—Showing that, as the divisor values approach zero, the quotient values increase without limit—that is, approach infinity—regardless of the value of the dividend.

Zero times zero equals zero. (2) Zero with any positive exponent is zero. (3) Any number except infinity is equal to one when it has a zero exponent. (4) The logarithm of zero is negative infinity. (5) The logarithm of infinity is positive infinity if the base is greater than one and negative infinity if the base is less than one.

In addition to cases of the type mentioned in the preceding para-

graph, there are others (such as zero with a zero exponent, infinity with a zero exponent, zero divided by zero, zero times infinity, zero divided by infinity, infinity divided by zero, one with an infinity exponent, infinity divided by infinity, and infinity minus infinity) that are called "indeterminate forms." They can be evaluated in most instances by methods of limits as found in the calculus.

In conclusion, the belief is here maintained that teachers are eager to know more about this unique integer, zero. Cases other than the four dealt with in this article are suggested for study, and those which are not indeterminate forms can be investigated in a manner similar to that used by the writer. Emphasis has been placed throughout on the inductive development of the rules commonly used. The proof of the reasoning applied in Tables I–IV, inclusive, is intuitive rather than demonstrative. The writer has found these tables and figures very effective in explaining the operations with zero to teachers in service and to students in training. Finally, it is believed that inquisitive pupils found in the elementary schools will profit greatly by knowing why the zero integer behaves as it does.

A UNIT OF WORK IN HISTORY IN THE FIFTH GRADE

ELIZABETH MUSGRAVE
Lower School, Berkeley Institute, Brooklyn, New York

Recognizing that history may become the background in which all subjects of the curriculum are related and recognizing also that the subject presents a wealth of human experiences which fall naturally into large units of content, progressive teachers no longer attempt merely to cover a series of topics as they appear in textbooks. No subject can better develop qualities of leadership, initiative, originality, and imagination than history provided that a child is permitted to take possession of facts, evaluate them, form his judgments, and live for the time being in the period which he is studying. The following description of the activities engaged in by a fifth-grade class studying the Norman Conquest shows how the study of history may become a real and vital experience.

A book containing an illustration of the old and very beautiful Bayeux tapestry was a valuable acquisition which furnished most interesting source material. This illustration was just the stimulus needed to loose all sorts of creative energy. The gay colors of the tapestry appealed strongly to the children and gave ample opportunity for expression through art appreciation.

A period of orientation was, of course, provided, and the many problems which presented themselves in connection with the unit were carefully considered and defined. An outline was made of all the matters connected with this period in history that the group wanted to learn. A great amount of research was required to answer the innumerable questions arising, some of which were: What did the coming of the Normans mean to England? Had the Northmen who settled in France made that country a stronger country? After the conquest did the English adopt the Norman customs and mode of living? The pupils made lists of all the benefits and of all the ill effects which England felt from the coming of the Normans.

Following closely the *Anglo-Saxon Chronicle* and every available book or magazine giving information on the subject, the group made thorough and painstaking investigations. The daily reports of their findings gave evidence that the unit was presenting opportunities rich in cultural content. The result of the research was always discussed and carefully checked before new elements or further problems could be considered. The picture of the Bayeux tapestry proved invaluable in checking much of the information which the children brought to class; methods of warfare, Norman ships, means of travel, and even recreations of the time are all interestingly portrayed in the forty-eight scenes of the tapestry.

As the group began to identify themselves closely with the intimate details in the lives of the Normans, they began to catch the color and romance of that time, and before long came the suggestion, "Let us make a play, and perhaps we can paint a tapestry, too!" Soon the members of the class were whole-heartedly absorbed in the intricacies of play-writing. Several plays were written by different pupils and were read to the class. A play based on three important episodes of the Norman Conquest was chosen for production, with the suggestion, "Let us try to make it so interesting that we may invite our parents to see it." One member of the group said that the play "did not sound like the old English tales" she had read, and it was agreed that the play would have to be translated into the manner of speech and the colloquialisms of the day.

Minstrels to sing for William and Matilda were to be in the play, but what should they sing? At this point the class read and discussed many famous old English ballads. These immediately inspired a desire to write original ballads. Many were written, and two were selected for the minstrels to sing. Because of one child's remark, "The one about King Alfred surely ought to please the King and Queen, for I found that Alfred was an ancestor of the Queen's," the following was chosen as a special honor to Queen Matilda.

KING ALFRED AND THE CAKES

Alfred the Great
Some cakes did bake.
The fire was hot
The King forgot!

The cakes did burn
Without a turn.
A peasant old
The King did scold.

A second ballad was selected for the minstrels to sing at the end of the play in order "to make the story of the play clear to our parents."

THE BAYEUX TAPESTRY

There was a brave knight
Who went forth to fight.
To win a great kingdom
He gave up his dukedom.

After long, bitter strife,
Almost losing his life,
This knight named "Duke William"
Became king of England.

A picture was embroidered
The story to tell
By the wife he had chosen,
Who did it quite well.

The landing, the battle, the castle, the
feast,
In colors gay of both man and beast
Were pictured in a tapestry
A surprise to his majesty.

After the ballads were written, the group asked the teacher of music to play for them some old English tunes that they might get ideas for composing their tunes to accompany the ballads. The melodies were soon successfully written, and the minstrels played the tunes on their psalteries as they sang joyfully for the King and the Queen.

The construction of the boat in which William and his men were to embark did not daunt this group of ten-year-old girls, and they followed faithfully the model so colorfully reproduced in the copy of the tapestry. In addition to the building of the boat, other related handwork in the unit included the designing and the painting of the scenery for the play, the designing and the making of all the cos-

tumes, and finally the embroidering of panels reproducing those of the tapestry.

If the unit were analyzed in terms of subjects, it would be found that most of those included in a fifth-grade curriculum were needed. The literature of the unit was varied and interesting and resulted in an eagerness to read in both the school library and in the "corner reference library." Books from libraries, at home or in the neighborhood, were sought that new points of view might be given. The writing of an historical play called for careful discussion and several periods of formal instruction in composition. Arithmetic was needed in computing the cost of materials for costumes and in measurements of materials for both costumes and scenery. Geography and history were closely interwoven; maps were studied to locate points of importance in the conquest of England, and knowledge was gained about the topography and climates of France and England. Music became more interesting than ever as the girls attempted to compose original tunes. In spelling, a list of new words needed for the unit enriched their vocabularies in both written and oral work.

Thus, the Norman Conquest became a very real experience to these fifth-grade pupils. The study provided work broad in its range of possibilities; its outcomes, it is hoped, will enrich and continue as interests throughout life.

Educational Writings

REVIEWS AND BOOK NOTES

Shall ability grouping be discontinued?—Ability grouping, which for some years has had considerable vogue (though perhaps no genuine tryout), has in recent months been the object of a number of attacks both from administrators in the field and from theorists in the colleges. A recent study[1] challenges the utility of the procedure of ability grouping and also its philosophical bases. Miss Keliher analyzes homogeneous grouping from the standpoint of its applicability to the achievement of certain educational aims, and she also analyzes its soundness judged by certain statistical and experimental criteria.

Miss Keliher's book is a stimulating attack. Part I presents a sketch of the historical development of present-day concepts regarding the provisions to be made for individual differences; a discussion of typical attempts to adjust the schools to individual needs through administrative devices, such as flexible promotion plans, supervised study, and remedial work; and an argument in favor of emphasizing individual differences in the "total personality sense" (p. 32). The second part of the book is concerned with an analysis of certain alleged assumptions concerning measurement, homogeneous grouping, curriculum, and the relation of the school to society. Having disposed of each of these assumptions in an interesting fashion, the author, in Part III, presents conclusions which, if accepted widely, would relieve homogeneous grouping of any further obligation to American education.

Two major causal factors seem to pave the way for such an interpretation of ability grouping: first, Kilpatrick's interpretation of Dewey's point of view as set forth in the former's castigation of the recitation-testing-penalty type of school procedure (William Heard Kilpatrick, *Foundations of Method*) and, second, an inadequate interpretation of the function of mental measurement as related to the prediction of school achievement.

Miss Keliher's interpretation of Dewey's point of view may be correct. Yet there are many who will question whether Dewey, with his very evident appreciation of the rôle of social inheritance even though transmitted by the printed

[1] Alice V. Keliher, *A Critical Study of Homogeneous Grouping with a Critique of Measurement as the Basis for Classification.* Teachers College Contributions to Education, No. 452. New York: Teachers College, Columbia University, 1931. Pp. vi+166. $1.75.

page, would use, as Miss Keliher has, the terms "academic achievement," "academic," and "subject matter" almost exclusively as terms of opprobrium. Likewise, the use of shibboleths such as, "Behavior is dynamic, growing, changing, leading on to further behavior" (p. 53) is worth little to anyone seeking to adjust curriculum and method to an adequate philosophy.

There are a number of straw men set up and knocked down and a plethora of dogmatic statements in this book. An example of the former is the statement: "The assumption that learning is adequately measured by standardized achievement tests is fundamental in the procedure of grouping on the basis of such tests" (p. 71). This alleged assumption may be necessary to the justification of Miss Keliher's attack. It is not necessary, however, to measurement, and it need not be accepted by believers in the utility of the tests. The assumption need only be that the standardized tests measure *better than any other technique so far developed* that particular scope of human behavior involved in the subject matter for which the test is valid. Again, "A mean, however, represents no individual, it is simply a mass average" (p. 92). Of course it also represents every individual, and mass averages in social measurement have played a considerable part in adding to our knowledge. Unless statistical procedure can be dispensed with entirely, such strictures against the technique seem only to imply a bias too strong for balanced evaluation of any method. Examples of dogmatic statements which serve to distress the thoughtful reader are: "The averaging idea which is at the root of homogeneous grouping leads toward mediocrity" (p. 98). "Laziness, from the educational point of view, is an attitude" (p. 126). "There is no reason why schools cannot dispense with marks" (p. 127).

Because of the arresting challenge of the book, the reviewer feels justified in commenting at length on two phases of the analysis it contains: (1) certain philosophical implications of such statements as the following: "Education must be concerned with the optimum growth of the whole child" (p. 46) and its corollary that homogeneous grouping is opposed to such a concept and (2) a variety of considerations based on experimental and statistical data implying that homogeneous grouping has not justified itself as a technique for improving academic achievement.

1. At the outset let us grant that "education must be concerned with the optimum growth of the whole child." Probably all educators would agree with this statement. How, then, does it happen that one person will use this statement as a challenge to homogeneous grouping and another, in defining ability grouping, will say that "the aim of ability grouping is to bring together pupils who will be able to work together and to progress together under conditions permitting the fullest possible development of the individuals involved"? (Austin H. Turney, "The Status of Ability Grouping," *Educational Administration and Supervision*, XVII [January, 1931], 22.)

What is meant by "educating the whole child"? Do we not need to keep in mind that education must have a direction? Dewey seems to have realized very keenly that it must. Otherwise, "optimum" development has no meaning. Un-

fortunately, many of the strenuous advocates of "educating the whole child" seem to have lost sight of this fact and apparently think of the whole educational experience of a child as comparable to those early years when the "child-centered" school may be pictured as concerned largely with a birdhouse-building, circus-playing type of education. We may agree with this procedure if it happens to satisfy the criteria for judging "optimum" development, but we feel that we ought to do what we started out to do, that is, educate the whole child. Moreover, in so doing, we believe that it must be in accordance with a philosophy that looks beyond the mere statement of seven or eight innocuous aims to some underlying, unifying philosophy (William F. Bruce, "Whither Secondary Education?" *Educational Administration and Supervision*, XV [September, 1929], 431–40). If we look for this philosophy, we may in time discover that not all of life will be birdhouse-building or circus-playing activities. The child will be the man some day, if we do not interfere with his "growth," and will face the gravest political, economic, and social problems. Is he to be suddenly plucked from his playhouse and circus and plunged into industry, marriage, living? In the course of his natural growth, he must increasingly manipulate abstract ideas and rely on vicarious experience for the knowledge and attitudes that may permit survival of himself and his fellow-man—in a word, the pernicious subject matter will not down. Of course, subject matter need not be learned in the traditional type of school. However, in their zeal to change the organization of the school, are not the zealots likely to do away with the most valuable source of knowledge that we have today—vicarious experience—provided for the child in the "academic" subject matter?

The point is that we have succeeded in "psychologizing" material very well. Our teaching technique is improving. Projects abound. However, the material we have psychologized and the projects we employ are often petty. Our boys and girls are thrown out of these project-employing schools into life absolutely unprepared. Let us psychologize if we will, but psychologize something worth while. We are a long way from doing without real subject matter as yet. The writer ventures to guess that, if the American public school ever seizes its opportunity, it will find itself involved in the most gigantic, the most fascinating task any school system ever undertook, that is, the utilization of "academic" or "abstract" material to provide those facts and to develop those attitudes that will make possible a social telic development of society toward "ever nobler ends." This result will not come from casting out abstract material but from substituting for the present negative type of curriculum an equally academic (perhaps more so) but much more important material necessary in the "optimum growth of the child" who is to live in a real world and not in a playhouse.

What if we found that, after all, children acquired the best attitudes when, at least part of the time, they worked with their peers in ability to acquire ideas? Or suppose that industry were a real asset, and suppose the school sought, even after the children turned to vicarious experience (books), to develop such a trait. Perhaps—let us be cautious—perhaps ability grouping might serve.

It does not follow that, when education becomes "concerned with the optimum growth of the whole child," subject matter will become *passé*, nor that all ranges of human ability must work in smiling, hectic groups together, nor yet that children must work "individually."

2. Among the considerations based on experimental and statistical data which imply that homogeneous grouping has not justified itself as a technique for improving the learning situation, the following will be given attention: (1) assumptions concerning the measurement of intelligence, (2) advantages claimed for homogeneous grouping as a provision for individual differences, and (3) the reduction of variations.

It is with regard to the assumptions concerning the measurement of intelligence that the greatest error in the book under review is made so far as this second group of points is concerned. The reviewer fails to see how any evaluation of ability grouping can be "critical" which ignores the contribution of Spearman and his school. It is easy enough to say that intelligence tests measure only a restricted phase of intelligence if one clings to the idea that the multitude of definitions of intelligence which can be found are evidence that the mental tests presume to test all these kinds of intelligence; but Spearman in his concept of "g" has given us a basis upon which we can more correctly regard the mental tests as a measurement of that factor "g" which is common to a large share of the academic school material. Since all school subject matter does not involve "g" in equal quantities, we would not expect ability grouping to function equally well in all school situations. Moreover, the functioning of "g" is not constant and maximal in all activities which involve it. More concretely, even though arithmetic involves a rather large percentage of "g" in its mastery, it does not follow that every boy and every girl will exercise all this "g" all the time in arithmetic. In other words, he will not achieve according to his maximum ability all the time, or perhaps none of the time in some situation. Hence, even though pupils are grouped on the basis of the best stable criterion available for grouping, namely, those tests which measure "g," it does not follow that there will not be overlapping in achievement. Miss Keliher, as well as Burr (Marvin Y. Burr, *A Study of Homogeneous Grouping in Terms of Individual Variations and the Teaching Problem.* Teachers College Contributions to Education, No. 457) upon whose thesis some of Miss Keliher's arguments are based, has ignored this fact—the most important consideration in ability grouping.

If it is true that those forms of behavior involving the manipulation of abstract ideas are the most important for the race (L. M. Terman, "Intelligence and Its Measurement: A Symposium," *Journal of Educational Psychology*, XII [March, 1921], 127–33), and for the individual in so far as he will be able to meet social, political, and economic problems, one may question the pertinence of those arguments against ability grouping such as the following: "One must be satisfied . . . . that intelligent behavior cannot be measured adequately if the measures are confined to academic lines" (p. 52). It may not be measured adequately in the sense that intelligent behavior is considered to be behavior not

involving "g," but one could say that such behavior is not particularly important in the scale of "intelligent" behavior.

The evidence submitted regarding the alleged superior learning of subject matter in homogeneous groups is inadequate. On the basis of this evidence the conclusion is reached that homogeneous grouping does not improve the learning of subject matter. This conclusion is strengthened by quoting Miller and Otto (W. S. Miller and Henry J. Otto, "Analysis of Experimental Studies in Homogeneous Grouping," *Journal of Educational Research*, XXI [February, 1930], 95–102). The reviewer's analysis of the experimental literature leads to a somewhat different conclusion (Austin H. Turney, "The Status of Ability Grouping," *Educational Administration and Supervision*, XVII [January and February, 1931], 21–42, 110–27). The same is true with regard to the effect on failures. The reports of Arthur (Grace Arthur, "An Application of Intelligence Tests to the Problem of School Retardation," *School and Society*, X [November 22, 1919], 614–20), Torgerson (T. L. Torgerson, "Is Classification by Mental Ages and Intelligence Quotients Worth While?" *Journal of Educational Research*, XIII [March, 1926], 171–80), and Senour (A. C. Senour, "Some Influences of Multiple-Track Organization," *Fourth Annual Conference on Elementary Supervision*, pp. 27–38. Bulletin of the School of Education, Indiana University, Volume III, Number 5) give us good reason to believe that ability grouping does reduce failures even when the same standards of achievement are used.

The statistical data provided by Miss Keliher concern children's attitudes. Evidence is presented that the dull participate as frequently as the bright in mixed groups. Evidence that they participate more frequently might be found. The author points out that the qualitative aspects are not evaluated. Much more important, it seems to the reviewer, would be an evaluation of the effect the grouping actually has on the child's attitude toward it. It has been found that by far the greater majority of junior high school pupils are not affected by "stigma," "inferiority complexes," or any other of the bad results ascribed to ability grouping by adults (Austin H. Turney and M. F. Hyde, "The Attitude of Junior High School Pupils toward Ability Grouping," *School Review*, XXXIX [October, 1931], 597–607).

The most conclusive evidence presented in support of the author's contentions regarding the reduction of variations are the data from Burr's careful study. The reviewer has pointed out elsewhere that these data can be interpreted as favorable to homogeneous grouping ("Does Homogeneous Grouping Make Teaching Easier?" *Elementary School Journal*, XXXII [October, 1931], 148–50). It is not an adequate interpretation of Burr's thesis to base conclusions on the percentage of overlapping of the range of achievement in sections following homogeneous grouping. When heterogeneous grouping is found to present adjustment difficulty approximately 40 per cent greater than that presented by homogeneous sections, especially when these sections are based on mixed criteria, it can certainly be said that the teaching situation in heterogeneous sections is decidedly more difficult. If the teaching situation is more difficult, the learning

situation is likely to be more difficult also. The reviewer questions the validity of the assumption that better attitudes are created by mixing such great percentages of obviously different individuals—merely for the purpose of satisfying a belief in the notion that the school must duplicate hypothetical life-situations.

Any attempt to consider the philosophical implications of ability grouping must encounter difficulties. Miss Keliher's discussion is worthy of the attention of any teacher. It is a strong antidote to the point of view which can see only a factory output measurable by test scores as the supreme accomplishment of the school. That it should be accepted as decisive in attempts to evaluate homogeneous grouping, mental measurement, or achievement testing would be unfortunate. The reader must understand that the criticisms presented are not for the purpose of disparaging a book which deserves the praise merited by this book but that they are for the purpose of keeping clearly before the teaching personnel the fact that many of the issues joined in Miss Keliher's dissertation are as yet issues.

AUSTIN H. TURNEY

UNIVERSITY OF KANSAS

Special provision for bright children.—Diligent search is being made for an educational plan that will do justice to children of all types and capacities. It appears to be especially urgent that those who in the nature of things assume leadership in human affairs should be properly educated up to the limits of their potentialities.

A book[1] designed to appeal to the practical administrator rather than the scholarly student of the subject presents the method that has been actually employed for the purpose in the elementary schools in Appleton, Wisconsin, during the past ten years. It is the method of supplementation through the use of extra-curriculum clubs: salesmanship, radio, teachers', mechanics', writing and dramatics, forestry, nurses', arts and crafts, and newspaper.

A more accurate title for the volume would have been "Extra-Curriculum Activities for the Brighter Pupils of the Seventh and Eighth Grades." That is the nature and apparently the complete extent of the enrichment. Each bright pupil belongs to one club and participates in its relatively narrow range of activities. No mention is made of any other type of enrichment.

The volume consists of three portions. The first quarter discusses, in a general way and without reference to the Appleton experiment, the general problem of educating the brighter children. The second quarter of the volume tells how the experiment in Appleton was carried on. The latter half of the book presents the actual programs and materials developed by the clubs.

While the more general treatment of the problem is journalistic and sketchy, yet it is stimulating and useful reading because of its clarity, freshness, and the

[1] W. J. Osburn and Ben J. Rohan, *Enriching the Curriculum for Gifted Children:* A Book of Guidance for Educational Administrators and Classroom Teachers. New York: Macmillan Co., 1931. Pp. xiv+408. $2.00.

inevitability of its logic. The specific experiment presents patterns of procedure that can be of service in practical planning.

FRANKLIN BOBBITT

Experimental studies of reading.—The value of detailed studies of instructional problems is clearly illustrated in a book by Gates[1] pertaining to interest and ability in reading. The book presents and interprets a score or more of experimental studies made by the author and his associates in the Institute of Educational Research, Teachers College, Columbia University. In presenting and interpreting these studies, the author has kept in mind that many interested in his findings are not familiar with the technicalities of research.

The book is divided into two parts. Part I is entitled "Experimental Studies of Certain Factors Which Influence Interest and Ability." The factors considered are vocabulary burden, type of material, literary characteristics, and reading purpose and situation. These studies are well conceived and result in very significant conclusions. Too much importance cannot be attached today to fundamental studies that lead to a clearer understanding of the factors that influence interest and progress in learning to read.

Concerning some of the interpretations of Gates's findings, questions may arise. For example, the fact that children preferred a combination of related reading and work-type materials does not depreciate the value of interesting stories as points of departure in reading activities. It indicates, however, that children are interested in, and respond favorably to, stories and information which are read and used in exercises and activities related to a developing theme. These opportunities can be provided in various forms and with different types of material.

Part II outlines a series of principles relating to the organization of reading materials and to methods of developing fundamental reading habits and of diagnosing difficulties. It also describes in detail reading materials and techniques which have been planned to exemplify the principles. These materials and techniques represent an interesting departure from current practices in teaching beginning reading and, therefore, merit careful study. Without doubt, Gates would be the last to maintain that they represent the only form in which the principles enunciated can be carried out.

WILLIAM S. GRAY

Measuring the efficiency of student teachers.—During the past three decades hundreds of articles, bulletins, pamphlets, and books dealing with methods and scales for rating teachers have been written. In spite of this fact, the problem of the valid and reliable determination of teacher efficiency is still unsolved, although progress in various directions has undoubtedly been made. The in-

[1] Arthur I. Gates, *Interest and Ability in Reading.* New York: Macmillan Co., 1930. Pp. xii+264. $1.50.

sistent and practical need for supervisors and administrators to rate teachers serves to stimulate students in this field to add to the already large amount of literature covering it. A publication dealing with the problem of measuring the efficiency of the practice teaching of students in training has appeared.[1]

After reviewing earlier methods of measuring teaching efficiency, the author proceeds, by an examination of state and city rating schemes, to select a list of thirty elements for use in analyzing the efficiency of teachers. These elements are selected on the basis of frequency of occurrence in the schemes examined and on the basis of a study of the literature dealing with the subject. The thirty items are grouped under (1) instruction, (2) management, (3) co-operation, and (4) personality. The author states that the plan is not "intended to be a scale for arriving at a numerical or otherwise general estimate of the total teaching ability of the student. It is rather intended as a means for assisting in the analysis of the teaching process by students in self-direction and by training teachers and supervisors in constructive criticism and direction of the student teacher's work. It is an instrument of method rather than a measuring scale" (pp. 5–6). He further states that it is not intended as a rating scale in the ordinary sense, that no numerical weight is attached to the separate items, that the plan presupposes observation of student teachers during a "reasonably long period of time," and that it aims to guide practice teachers and supervisors to supply and standardize the vocabulary of analysis and criticism and to make more uniform the judgments of those who are in charge of the direction and the evaluation of the work of student teachers.

Although the author disclaims the intent of setting up a quantitative rating scale, he nevertheless tested the reliability of his plan by comparing the judgments obtained from its use by training teachers with judgments obtained in the same manner by supervisors of student teaching. The Pearson correlations obtained ranged from .64 to .84. Similarly, he obtained a correlation of .77 between the judgments of committees of training teachers and those of supervisors of student teaching. Of the thirty elements included in the plan, the following are found to have the greatest discriminatory value: use of illustrative material, teaching sense, class sense, development, assignment, English (pronunciation, enunciation, and grammar), habits and skills, appearance of room, motivation, teacher's knowledge of his subject, pupil participation, class movements, general bearing, voice, lesson-planning, co-operation, intelligence.

The author admits the need for further experimentation with his method in order that greater reliability may be produced. In the last analysis, of course, the usefulness of the method will depend not only on its reliability but also on its objectivity and validity—criteria against which quantitative scales are evaluated.

I. N. MADSEN

LEWISTON STATE NORMAL SCHOOL
LEWISTON, IDAHO

[1] Edwin W. Adams, *A Qualitative Analysis of Certain Teaching Traits:* A Study of the Problem of Measuring the Efficiency of Student Teachers Engaged in Practice Teaching. Philadelphia: Temple University, 1930. Pp. 98.

A manual for students of school supervision.—A useful and well-organized collection of problems for use in supervision classes has been prepared by Professor Kyte.[1] The manual is designed to accompany the author's recent general textbook, but it will be found useful in any course in supervision, however organized.

The problems in the collection are unlike those usually found in such manuals in that they are highly practical, clearly defined, amply supplied with data, and accompanied by a remarkably complete bibliography. The list of problems is well distributed over the various functions of supervision.

Not only will the little volume be welcomed by instructors as a genuine aid to teaching, but students will find it an excellent medium for making vital connections between theory and practice. It is a careful, workmanlike job throughout, and the reviewer regards it as a valuable addition to the materials in the field.

W. H. BURTON

History entertainingly written.—To the historical literature for junior and senior high schools is added an excellent life of La Salle.[2] This biography is rich in a multitude of authentic details skilfully chosen to re-create a living portrait of the great French explorer. From a wealth of contemporary source materials (which include letters, journals, and memorials of La Salle himself, the writings of the trusted leaders, Tonty and Joutel, and the records of the priests who were intrepid companions on La Salle's many journeys), the author builds up a vivid picture of French hopes and accomplishments in inland America as gathered about the person of Robert Cavalier, Sieur de la Salle. So smoothly are the excerpts blended into the narrative that the story flows on, the richer for their introduction.

Opportunity for historical criticism and evaluation of materials is given often in cases in which the author is able to present conflicting source accounts of critical events.

Aside from its historical value, the book stands on its own merits as a fascinating narrative of realistic romantic writing. Through to the last of its three hundred odd pages the majestic figure of La Salle lures the reader. As a story, alone, it is well worth one's time.

James Albert Woodburn, professor emeritus of American history, Indiana University, has written the Introduction. In the following paragraphs he very accurately describes the book.

> Mr. Lockridge brings life and vividness to this story. He has gone into the sources for the history of the times in which his hero lived and wrought. He has gone over the routes and visited the scenes of La Salle's travels and trading posts. He has entered as much as possible into the spirit of the man and his sufferings. He tells for his reader, in a vivid and attractive style, the exciting and entrancing story of La Salle's life.

[1] George C. Kyte, *Problems in School Supervision.* Boston: Houghton Mifflin Co., 1931. Pp. xiv+214. $1.60.

[2] Ross F. Lockridge, *La Salle.* Yonkers-on-Hudson, New York: World Book Co., 1931. Pp. xvi+312. $1.40

To Mr. Lockridge history is never dusty and dry. He finds in the past the story of human life, of stirring events, of the achievements of great men. To him the past is not dead; or, if it is, he seeks to make it live again by a story that carries with it an appeal to all who are interested in the great men and the deeds of the past. His *La Salle* is a worthy companion to his *George Rogers Clark* and *A. Lincoln.*

RUTH R. WATSON

The word, the sentence, and the paragraph.—A three-book language series[1] for Grades III–VIII, inclusive, offers the development of sentence sense as its primary objective in the early and middle grades, while in the seventh and eighth grades attention is given to the construction of paragraphs and to the writing of compositions. A liberal amount of grammar is supplied in the middle and upper grades, all the parts of speech being taught before the end of the sixth grade. An effort is made to apply the grammar to the problem of usage and to give functional emphasis wherever possible. Consistent attention is given also to word study. The word, the sentence, and the paragraph are the accepted centers of emphasis through the six grades.

Many different types of activities and exercises are included at all grade levels. In assembling their material, the authors have evidently considered children's interests as well as classroom needs. Much interesting reading matter is distributed through the books. Even more might be used to good advantage. The interdependence of reading activities and writing activities is not sufficiently recognized in most language courses.

The authors will undoubtedly win commendation from many sources for this new edition of their work. Some valid questions, however, may be raised. How much thought content is consistently introduced? What principle determines the organization of the chapters? Are the poems and stories always used in such a way as to give them point in a language book? Are the pages visually attractive to the children? It seems to the present reviewer that these are some of the questions which point the way toward much-needed improvement in elementary-school language books. It is particularly imperative that cores of organization be found which will supply a unifying content without sacrificing any of the essential language disciplines. The last question raises a problem which is receiving increased attention from textbook makers, but much yet remains to be done. The kind and amount of illustration, the page makeup, and the type of binding are real factors in making textbooks effective agents in classrooms.

ROY IVAN JOHNSON

HARRIS TEACHERS COLLEGE
ST. LOUIS, MISSOURI

[1] C. Ralph Taylor and Marion E. Tobey, *Vital English*, Primary Book for Lower Grades, pp. xxx+258; C. Ralph Taylor and Louise K. Morss, *Vital English*, Intermediate Book, pp. xxii+266; C. Ralph Taylor, *Vital English*, Advanced Book, pp. xxx+418. Chicago: Laurel Book Co., 1930 (revised).

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

CLAPP, FRANK L., CHASE, WAYLAND J., and MERRIMAN, CURTIS. *A Technique of Study To Accompany "Introduction to Education."* Boston: Ginn & Co., 1931. Pp. x+134. $0.80.

COMMISSION ON ENGLISH, THE. *Examining the Examination in English:* A Report to the College Entrance Examination Board. Harvard Studies in Education, Vol. XVII. Cambridge, Massachusetts: Harvard University Press, 1931. Pp. xvi+296. $2.00.

EBAUGH, CAMERON DUNCAN. *The National System of Education in Mexico.* Johns Hopkins University Studies in Education, No. 16. Baltimore: Johns Hopkins Press, 1931. Pp. x+150. $2.00.

Graduate Theses in Education, 1927–1931, Abstracts, Vol. I. Compiled by Carter V. Good, Walter L. Collins, and Chester A. Gregory. Cincinnati, Ohio: Teachers College, University of Cincinnati, 1931. Pp. xxvi+396.

MARSHALL, M. V. *Education as a Social Force:* As Illustrated by a Study of the Teacher-Training Program in Nova Scotia. Harvard Bulletins in Educatio No. 18. Cambridge, Massachusetts: Harvard University Press, 1931. Pp. xxx+162. $1.00.

NASH, JAY B. *The Administration of Physical Education:* With Special Reference to Public Schools. New York: A. S. Barnes & Co., Inc., 1931. Pp. xiv+492. $3.00.

PRINGLE, RALPH W. *The Psychology of High-School Discipline.* Boston: D. C. Heath & Co., 1931. Pp. xii+362. $1.60.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

ADAMS, JESSE E. The Self-teaching Spelling Tablet: Book One (For Grades I and II), $0.16; Book Two (For Grades III and IV), $0.16; Book Three (For Grades V to VIII), $0.16. Newark, New Jersey: Silver, Burdett & Co., 1931. $0.52.

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